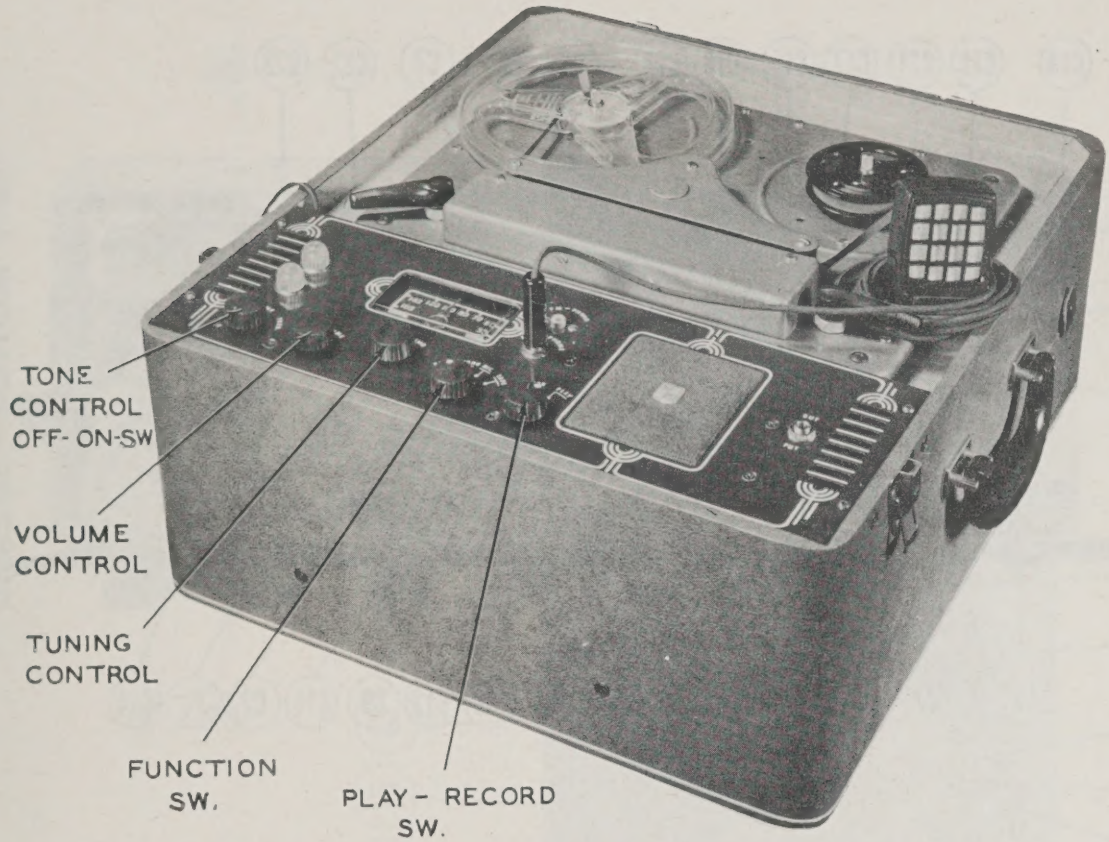
AIRLINE
MODEL 94GAA3654A



AIRLINE
MODEL 94GAA3654A

AIRLINE MODEL 94GAA3654A

TRADE NAME	Airline, Model 94GAA3654A
SUPPLIER	Montgomery Ward and Co., 619 Chicago Ave., Chicago, Illinois
TYPE SET	AC Operated Combination Tape Recorder-Radio, Superheterodyne Receiver with Loop Antenna
TUBES (SEVEN)	Types 6SA7 Converter, 6SK7 IF Amp., 6SQ7 DET-AVC-AF-Mic. Pre-Amp., 6SL7GT 2nd & 3rd AF Amp., 6V6GT Power Output, 6C4 Bias Oscillator, 6X5GT Rectifier
POWER SUPPLY	110-120 Volts AC — RATING .45 Amp. at 117 Volts AC
TUNING RANGE—BROADCAST	535-1620KC

FOR SERVICE INFORMATION ON TAPE RECORDER SEE INTERNATIONAL ELECTRONICS MODEL P-3 PHOTOFACT SET #88, FOLDER #3, OR RECORD CHANGER MANUAL CM2.

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap fully closed and set pointer parallel with base of dial.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Turn the function selector switch to "Radio". Turn the "Record-play" switch to "play".

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01MFD	High side to stator on rear section of tuning gang. Low side to chassis.	455KC (400 ∿ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.		Loop	1620KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		Loop	1400KC	1400KC	"	A6	"
4.		Loop	600KC	600KC	"		Adjust end plates of oscillator section of tuning gang. Repeat steps 2 and 4 until no further improvement can be made.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		AIRLINE PART No.	STANDARD REPLACEMENT		
V1	Converter	6SA7	6SA7	8R	
V2	IF Amp.	6SK7	6SK7	8N	
V3	DET. -AVC-1st AF Amp. -Mic. Pre-Amp.	6SQ7	6SQ7	8Q	
V4	2nd AF Amp. -3rd AF Amp.	6SL7GT	6SL7GT	8BD	
V5	Power Output	6V6GT	6V6GT	7AC	
V6	Bias Oscillator	6C4	6C4	6BG	
V7	Rectifier	6X5GT	6X5GT	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	AIRLINE PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	20	450	1006	AF4444J			EL-420	▪ Filter
B	20	450						■ Filter
C	20	350						▲ Filter
D	10	350						Filter
C2	8	350	1008	PRS350/8			UT-83	Filter
C3A	25	25	1007	PRS25/25			TA-25	2nd AF Amp. Cathode Bypass
B	25	25		PRS25/25			TA-25	3rd AF Amp. Cathode Bypass
C	25	25		PRS25/25			TA-25	Output Cathode Bypass
C4	10	25	1009	PRS25/10			TA-10	1st AF Amp. Cathode Bypass
C5	.05	400	803A	P488-05			TM-15	Decoupling
C6	.05	600		P688-05			TM-15	AVC Filter
C7A	100		*	GP100M	D6-101	GP1K-100	1FM-31	Diode RF Filter
B	100			GP100M	D6-101	GP1K-100	1FM-31	Diode RF Filter
C8	.02	200	801	P488-02			TM-12	Audio Coupling
C9	.002	600	810	P688-002	D6-202	GP2M-002	TM-22	Tone Compensation
C10	.05	600	803A	P688-05			TM-15	Audio Coupling
C11	250		†	GP250M	D6-251	GP2K-250	1FM-325	Tone Compensation
C12	.02	200	801	P488-02			TM-12	Tone Compensation
C13	10000		‡	GP10000M	D6-103	821-01	TM-11	Audio Coupling
C14	5000		§	GP5000M	D6-502	811-005	TM-25	Tone Compensation
C15	.002	600	810	P688-002	D6-202	GP2M-002	TM-22	Tone Compensation
C16	250		817	GP250M	D6-251	GP2K-250	1FM-325	3rd AF Plate Bypass
C17	10000		♦	GP10000M	D6-103	821-01	TM-11	Audio Coupling
C18	.1	500	1008	P688-1			TM-1	Audio Coupling
C19	.002	600	810	P688-002	D6-202	GP2M-002	TM-22	Voltage Divider
C20	470	500	808A	1468-0005	D6-471	GP2K-470	1FM-35	Osc. Coupling
C21	.05	600	803A	P688-05			TM-15	Osc. Decoupling
C22	.05	400	803A	P488-05			TM-15	Line Filter
C23	.05	400	803A	P488-05			TM-15	Line Filter

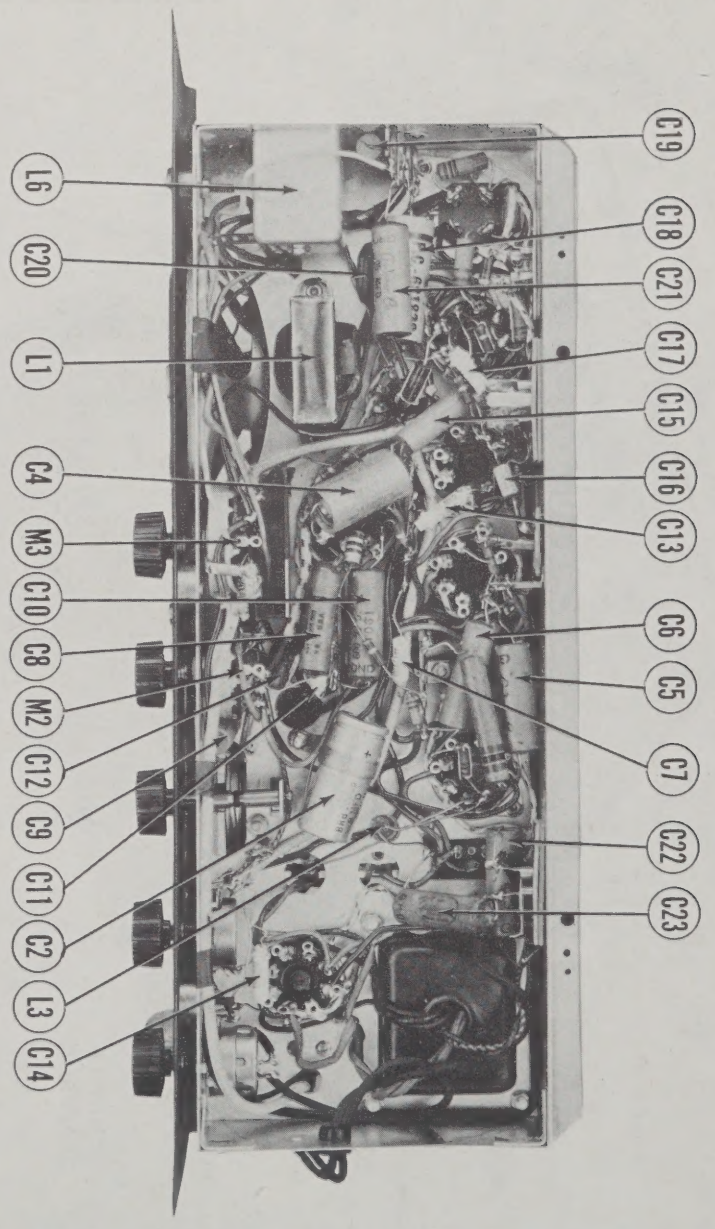
* Items C7A, C7B and R5 are combined into one unit obtainable under MFGR'S Part No. 811.
† Items C11 and R12 are combined into one unit obtainable under MFGR'S Part No. 818.
‡ Items C13 and R16 are combined into one unit obtainable under MFGR'S Part No. 814.
§ Items C14 and R17 are combined into one unit obtainable under MFGR'S Part No. 815.
♦ Items C17 and R19 are combined into one unit obtainable under MFGR'S Part No. 814.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	AIRLINE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	1 Meg.	½	405	Q19-137X	AT-112		Volume control, tapped at 500KΩ
B	Shaft			Not Req.	KSS-3		Attach to R1A per instructions
R2A	1 Meg.	½	406	Q13-137	AM-63-Z	BSK-70-S	Tone control
B	Shaft			Not Req.	KSS-3	Not Req.	Attach to R2A per instructions
C	Switch			76-1	SW-A	*	Attach to R2A per instructions

* Switch is attached at factory.

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA AIRLINE PART No.	IRC PART No.	IDENTIFICATION CODES
	RESISTANCE	WATTS			
R3	22KΩ	½		BTS-22K	Osc. Grid
R4	10KΩ	2		BT-2-10K	Decoupling
R5	50KΩ	½	*	BTS-47K	Diode Filter
R6	2.2 Meg.	½		BTS-2.2 Meg.	AVC Network
R7	510KΩ	½	502	BTS-470K	Tone Compensation
R8	10KΩ	½	530	BTS-10K	Tone Compensation
R9	2200Ω	½	504	BTS-2200	1st AF Cathode
R10	510KΩ	½	502	BTS-470K	1st AF Grid
R11	270KΩ	½	529	BTS-270K	1st AF Plate
R12	220KΩ	½	†	BTS-220K	Tone Compensation
R13	10KΩ	½	530	BTS-10K	Tone Compensation
R14	2.2 Meg.	1		BTA-2.2 Meg.	2nd AF Grid
R15	4700Ω	½	519	BTS-4700	2nd AF Cathode
R16	250KΩ	½	†	BTS-270K	2nd AF Plate
R17	50KΩ	½	§	BTS-47K	Tone Compensation
R18	4700Ω	½	519	BTS-4700	3rd AF Cathode
R19	250KΩ	½	♦	BTS-270K	3rd AF Plate
R20	510KΩ	½	502	BTS-470K	Output Grid
R21	330Ω	1	609	BTA-330	Output Cathode
R22	100Ω	½	524	BW-½-100	Output Cathode
R23	510KΩ	½	502	BTS-470K	Feedback-See Note 1
R24	2200Ω	½	504	BTS-2200	Bias Osc. Cathode
R25	510KΩ	½	502	BTS-470K	Serie Neon Lamp
R26	510KΩ	½	502	BTS-470K	Serie Neon Lamp
R27	270KΩ	½	529	BTS-270K	Voltage Divider
R28	10KΩ	1	608	BTA-10K	Bias Osc. Plate
R29	3.2Ω	1			Voice Coil Shunt
R30	47Ω	½	520	BW-½-47	Voice Coil Shunt
R31	22KΩ	½		BTS-22K	1st AF Grid
R32	5.1 Meg.	½	535	BTS-4.7 Meg.	Tone Compensation
R33	5.1 Meg.	½	535	BTS-4.7 Meg.	Tone Compensation-See Note 2
R34	15KΩ	1	610	BTA-15K	Filter
R35	2000Ω	1	616	BW-1-2200	Filter
R36	1000Ω	1	607	BW-1-1000	Filter

* Items C7A, C7B and R5 are combined into one unit, obtainable under MFGR'S Part No. 811.
† Items C11 and R12 are combined into one unit obtainable under MFGR'S Part No. 818.
‡ Items C13 and R16 are combined into one unit obtainable under MFGR'S Part No. 814.
§ Items C14 and R17 are combined into one unit obtainable under MFGR'S Part No. 815.
♦ Items C17 and R19 are combined into one unit obtainable under MFGR'S Part No. 814.
Note 1. Some models use 1 Meg. resistor in this application.
Note 2. Not used in all models.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
	PRI.	SEC. 1	SEC. 2	SEC. 3				
T1	117VAC ② .45A	550VCT .068ADC	6.3VAC ② 2.6A		1101	P-6011 ①	P-2951 ①	PH-70B ①

① Add series resistor to reduce plate voltage.

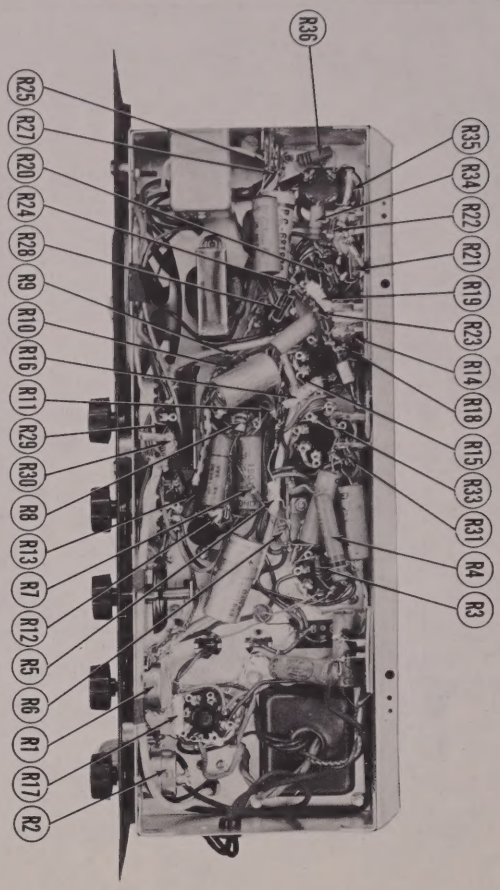
TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
	IMPEDANCE		DC RES.						
	PRI.	SEC.	PRI.	SEC.					
T2	5.8KΩ	3.4Ω	620Ω	.7Ω	1203	A-3849	A-2904	RO-9	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA AIRLINE PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
	FIELD	V. C. IMP.		ST-107		
SP1	PM	3.4Ω	2605	MOD. P5-V	5A1	
	CONE DIA.	V. C. DIA.				
SP2	4 1/2"	3/4"				

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE @ CURRENT 1000 ~)					
L1	.068A	250Ω	4.8 Henries	1301	C-1709 ②	C-2975	R-650 ②	② Drill one new mounting hole.

R F COILS

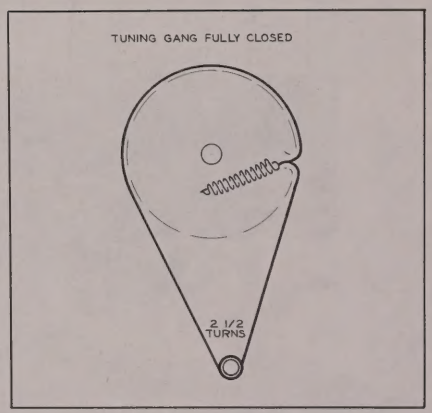
ITEM No.	USE	DC RES.		REPLACEMENT DATA AIRLINE PART No.	MEISSNER PART No.
		PRI.	SEC.		
L2	Loop Ant.	1.5Ω		1512	
L3	Osc. Coil	7.5Ω		1403	14-1073
L4	1st IF Trans.	13Ω	13Ω	1402	16-6678
L5	2nd IF Trans.	13Ω	13Ω	1402	16-6678
L6	Bias Osc.	36Ω		1404	

DIAL LIGHTS

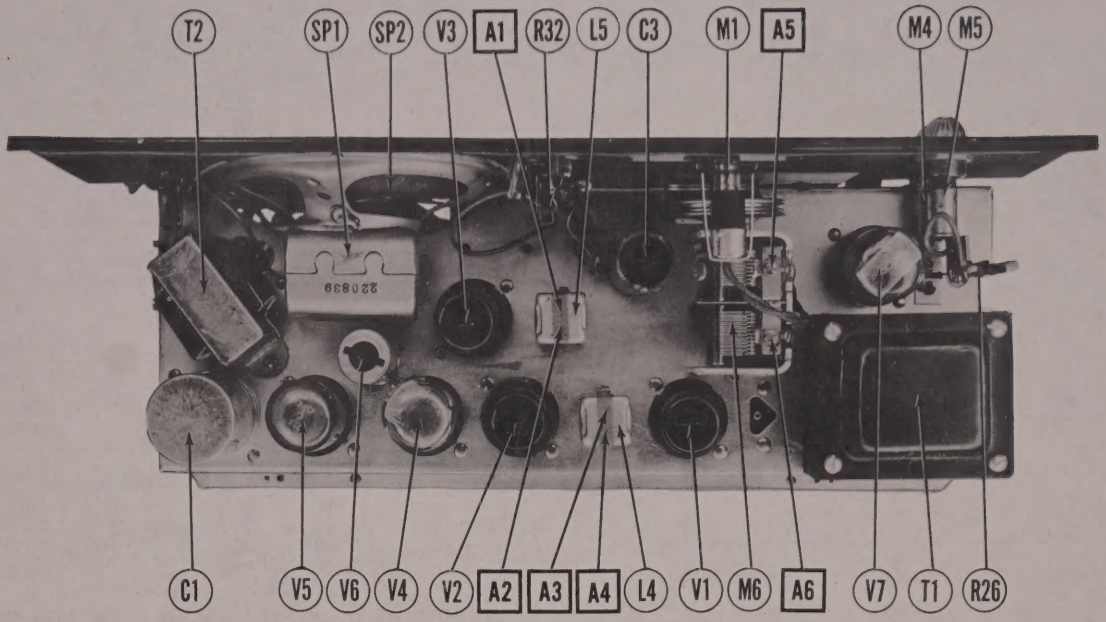
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA AIRLINE PART No.		NOTES
M1	Bayonet	6-8	.15	Brown	1513		Type #47

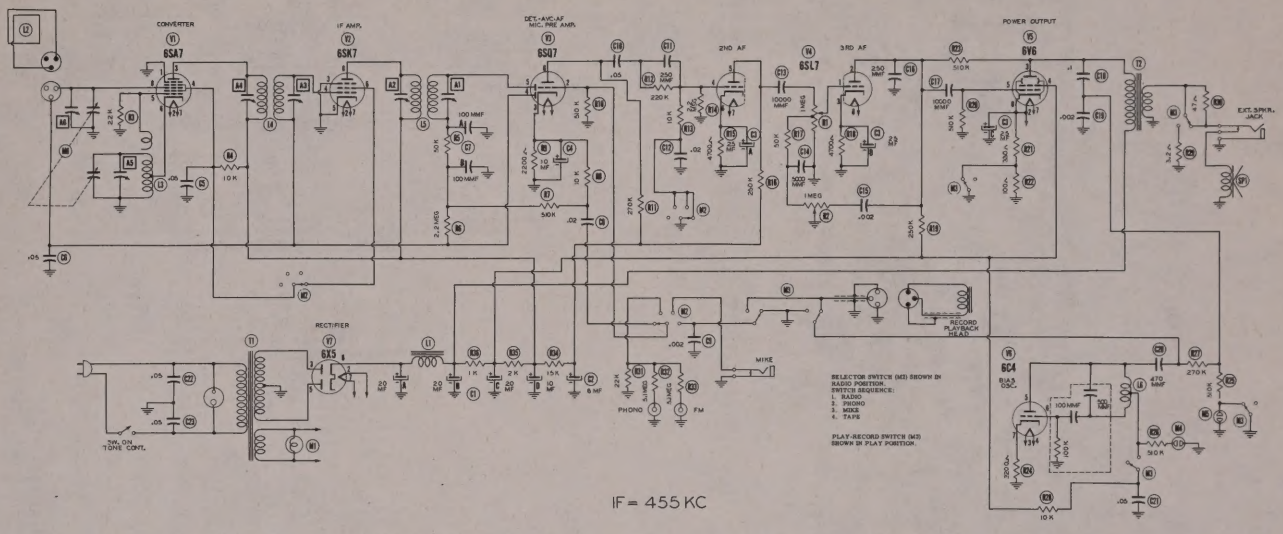
MISCELLANEOUS

ITEM No.	PART NAME	AIRLINE PART No.	NOTES
M2	Switch	2206	Function
M3	Switch	2205	Play-Record
M4	Neon Bulb	2202-A	NE-51
M5	Neon Bulb	2202-A	NE-51
M6	2 Gang Var. Cap.	1004	(18-394MMF, 31-202MMF)
	Dial Scale	1722	
	Dial Pointer	1736	
	Cabinet	2103-A	
	Knob	2406	Plain
	Knob	2407	With dot



DIAL CORD DRIVE





IF = 455 KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SA7	0V.	255VDC	100VDC	90VDC	1.7VDC	0V.	255VDC	-.1VDC
V 2	6SK7	0V.	255VDC	0V.	-.1VDC	0V.	90VDC	255VDC	100VDC
V 3	6SQ7	0V.	0V.	.9VDC	-.1VDC	.3VDC	85VDC	255VDC	255VDC
V 4	6SL7GT	0V.	175VDC	2.4VDC	0V.	90VDC	1.5VDC	255VDC	255VDC
V 5	6V6GT	0V.	255VDC	275VDC	270VDC	0V.	190VDC	255VDC	18VDC
† V 6	6C4	320VDC	225VDC	255VDC	255VDC	220VDC	1-32VDC	7.4VDC	
V 7	6X5GT	0V.	255VDC	280VAC	280VAC	0V.	280VAC	0V.	255VDC

‡ TAKEN WITH VACUUM TUBE VOLTMETER.
† 6.3 VAC MEASURED ACROSS FILAMENTS.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SA7	0Ω	430Ω	12.5KΩ	115KΩ	35KΩ	0Ω	430Ω	2.7 Meg.
V 2	6SK7	0Ω	430Ω	0Ω	0Ω	2.7 Meg.	0Ω	115KΩ	430Ω
V 3	6SQ7	0Ω	505KΩ	2.2KΩ	2.7 Meg.	370KΩ	127KΩ	430Ω	430Ω
V 4	6SL7GT	1 Meg.	1250KΩ	4.7KΩ	30KΩ	127KΩ	4.7KΩ	430Ω	430Ω
V 5	6V6GT	Inf.	430Ω	190Ω	11.5KΩ	160KΩ	117KΩ	430Ω	430Ω
† V 6	6C4	115KΩ	115KΩ	430Ω	430Ω	115KΩ	105KΩ	2.5KΩ	
V 7	6X5GT	Inf.	430Ω	180Ω	Inf.	200Ω	Inf.	430Ω	80Ω

† TAKEN IN "RECORD" POSITION.
† MEASURED FROM PIN 8 OF V7.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

*TRADE MARK

CROSLEY MODEL
10-401

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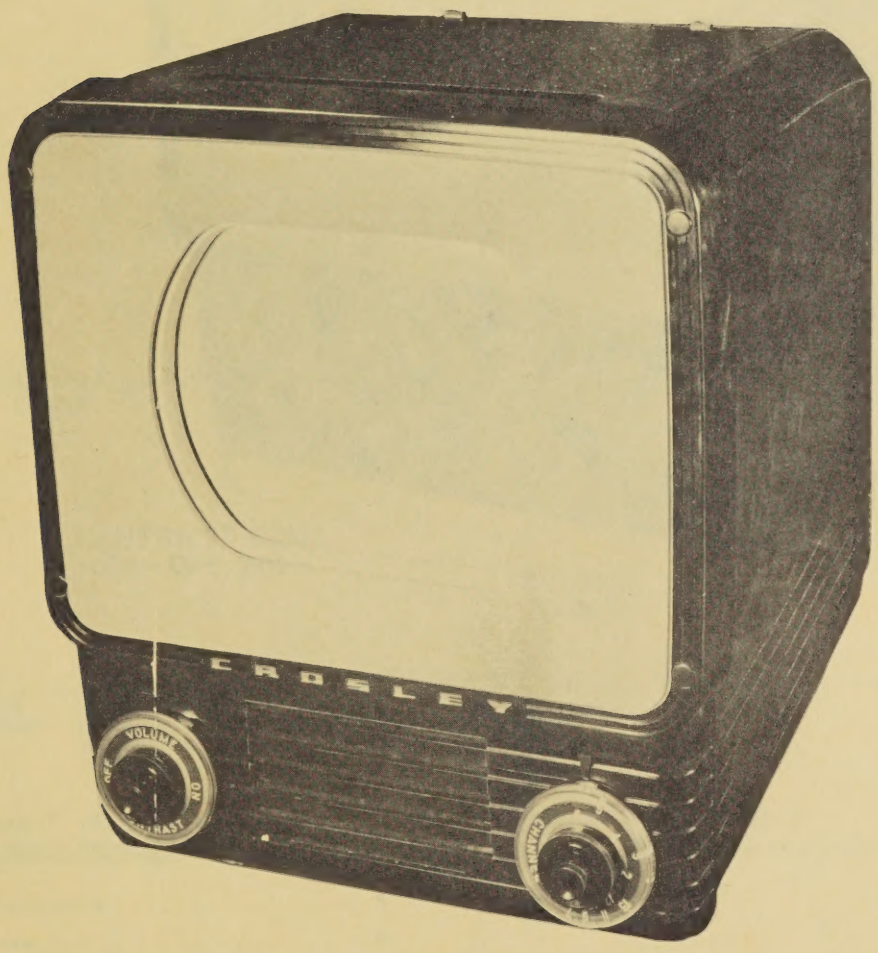

CROSLEY MODEL
10-401

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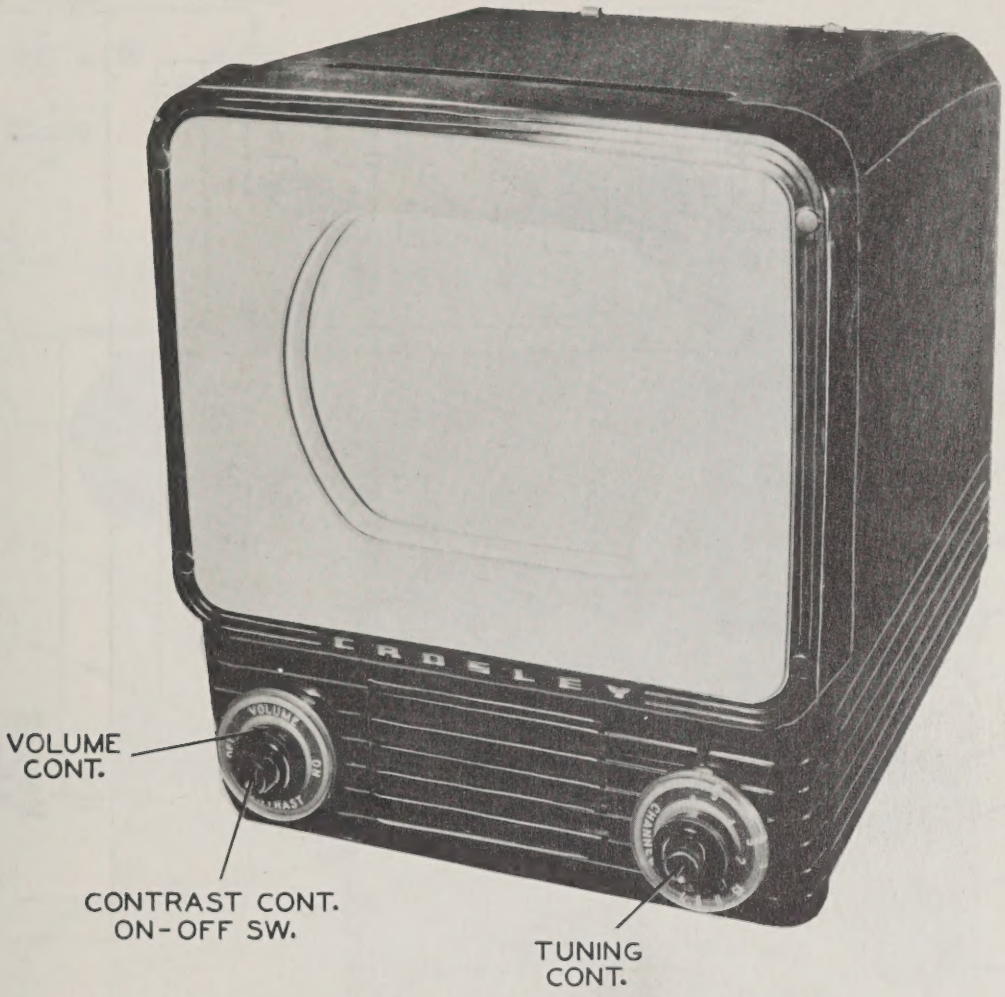
Date 5/50 Set No. 95—Folder No. 2



CROSLEY MODEL 10-401

TRADE NAME	Crosley, Model 10-401
MANUFACTURER	Crosley Corp., 1329 Arlington St., Cincinnati, Ohio
TYPE SET	Television Receiver
TUBES	Twenty One
POWER SUPPLY	110-120 Volts AC-60 Cycle
RATING	1.75 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13

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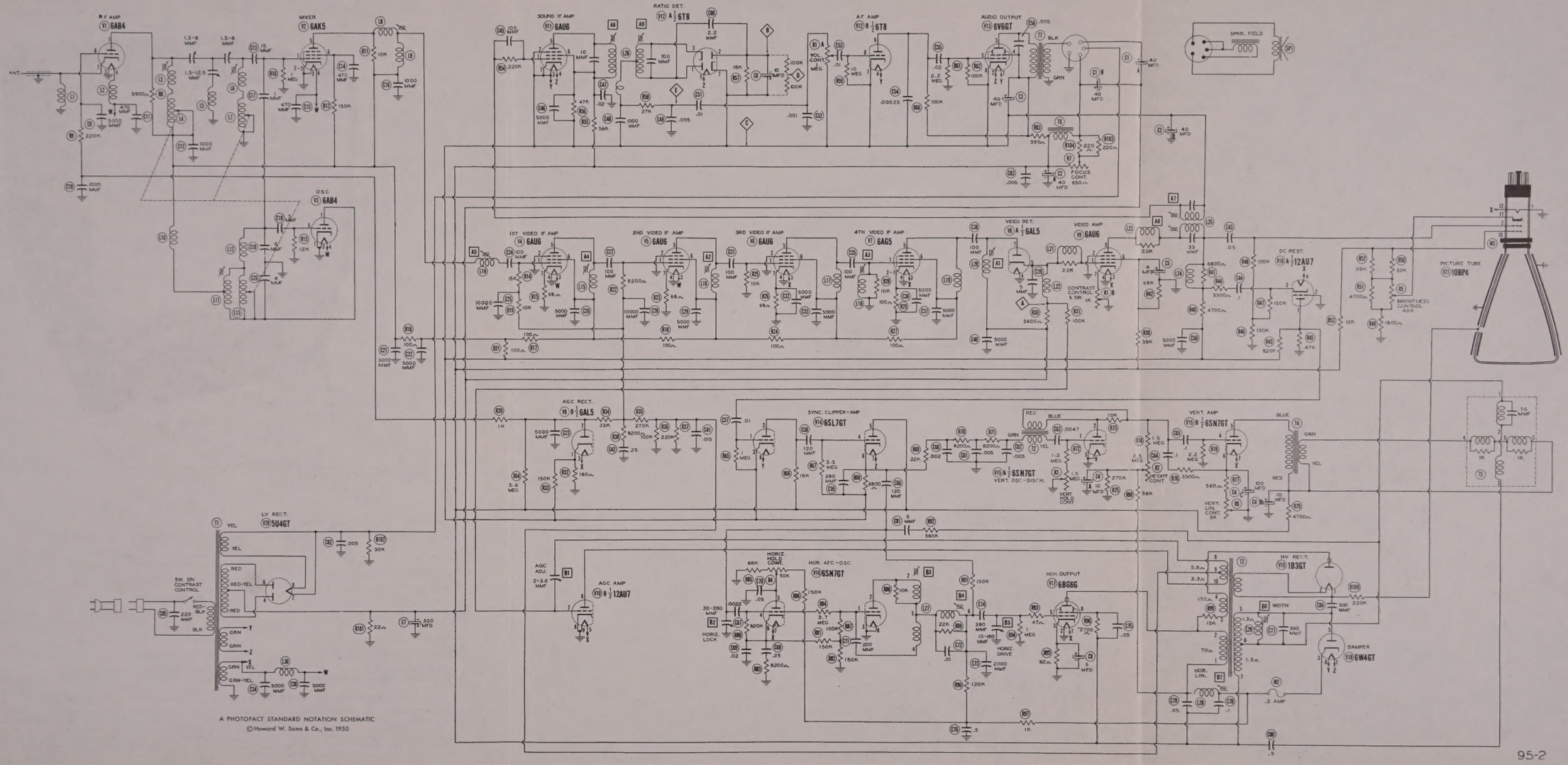
CROSLEY
MODEL 10-401


R F AMP V1 6AB4
MIXER V2 6AX5
OSC V3 6AB4
SOUND IF AMP V11 6AU6
RATIO DET. V12 A 1/2 6T8
A F AMP V12 B 1/2 6T8
AUDIO OUTPUT V13 6V6GT
SPKR. FIELD
1ST VIDEO IF AMP V4 6AU6
2ND VIDEO IF AMP V5 6AU6
3RD VIDEO IF AMP V6 6AU6
4TH VIDEO IF AMP V7 6AG5
VIDEO DET. V9 A 1/2 6AL5
VIDEO AMP V9 6AU6
DC REST. V18 A 1/2 12AU7
PICTURE TUBE V21 10BP4
AGC RECT. V8 B 1/2 6AL5
SYNC. CLIPPER-AMP V14 6SL7GT
VERT. OSC-DISCH. V15 A 1/2 6SN7GT
VERT. AMP V15 B 1/2 6SN7GT
LV RECT. V20 5U4GT
AGC AMP V16 B 1/2 12AU7
HORIZ. HOLD CONT.
HOR. AFC-OSC V16 6SN7GT
HOR. OUTPUT V17 6BG6G
HV RECT. V19 1B3GT
DAMPER V18 6W4GT
SW. ON CONTRAST CONTROL
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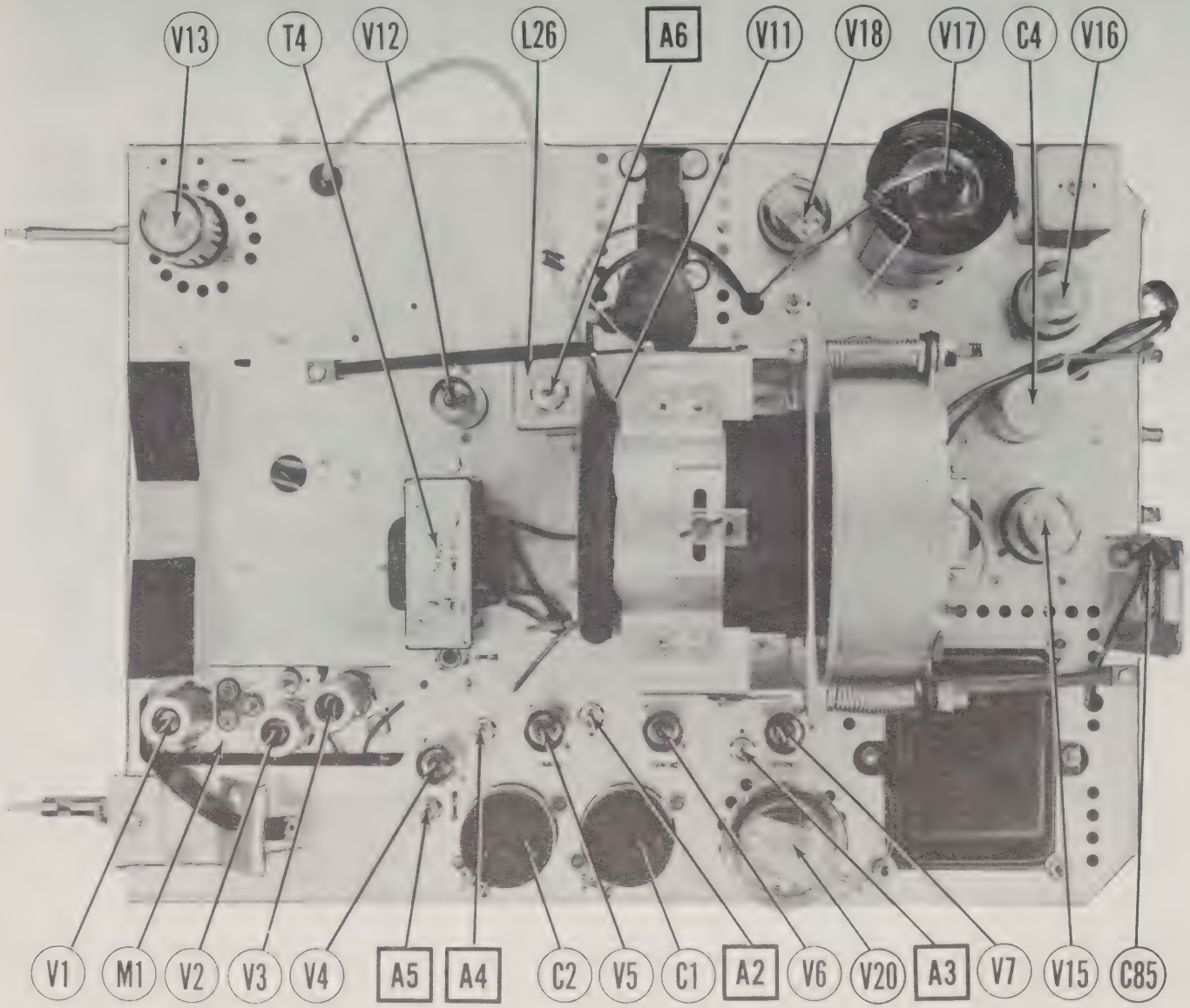
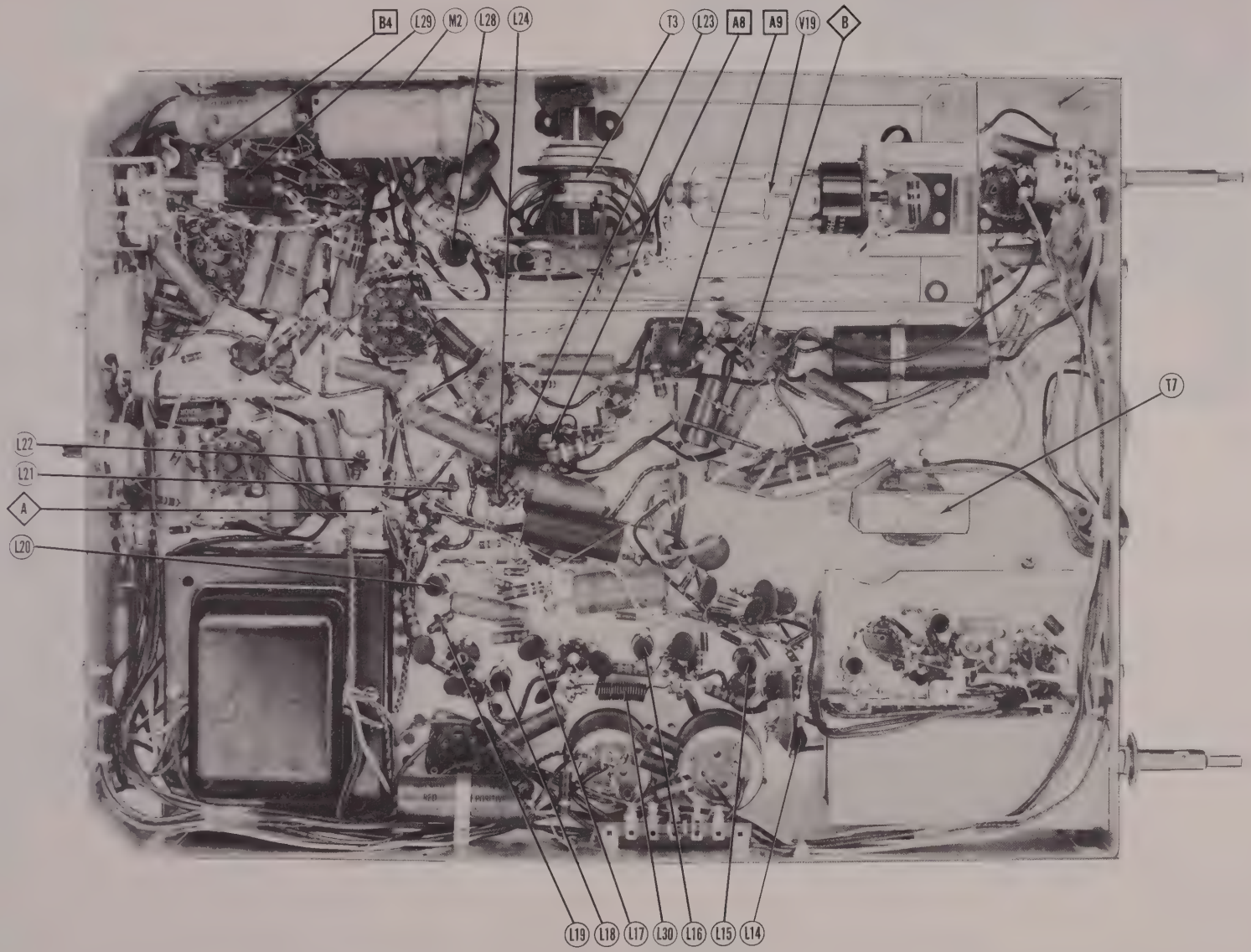
95-2

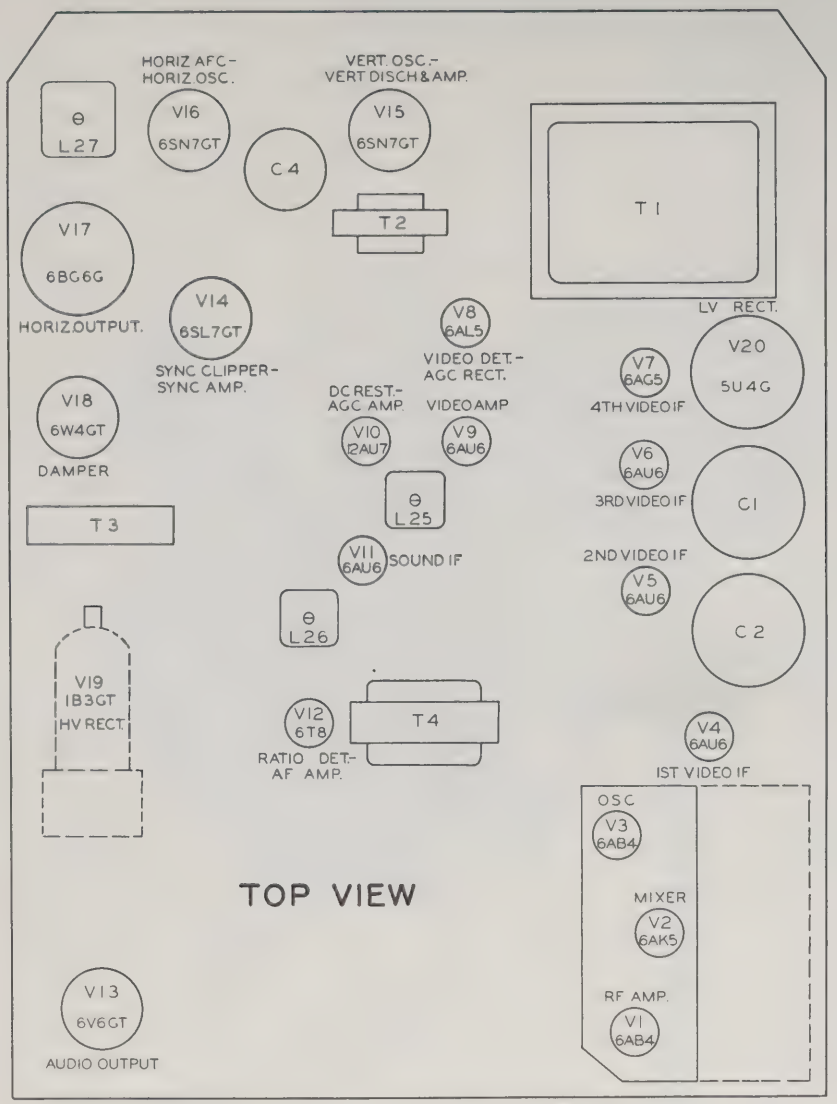
CROSLEY
MODEL 10-401

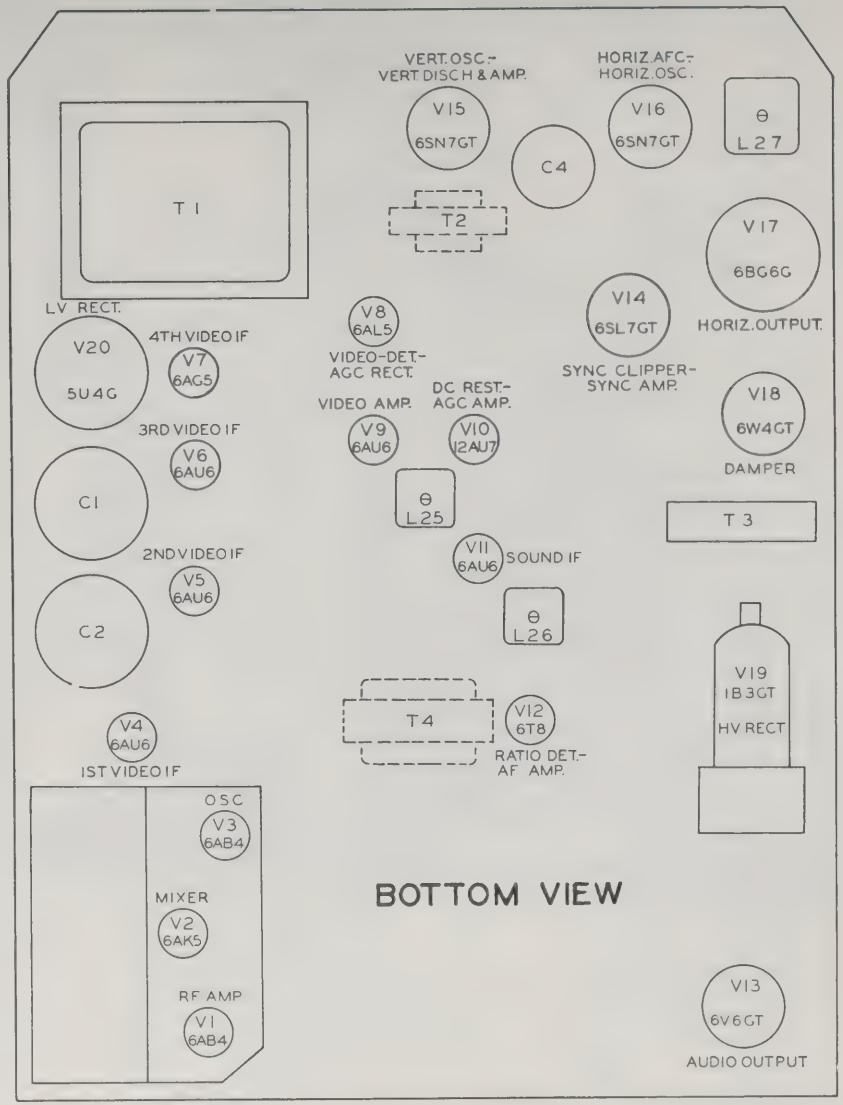


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION





TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The end of the high voltage lead should be securely taped to prevent accidental contact during alignment.

VIDEO IF ALIGNMENT

Connect a short lead between the junction of R30 and C40 and pin 2 of V8.
During video IF alignment the common lead of the VTVM is connected to -4 volts with respect to chassis, avoid grounding the VTVM case.
Remove the local oscillator tube (V3) from its socket to prevent erroneous indications.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	25.65MC (Unmod.)	Any	DC Probe and common leads across R30.	A1, A2	Adjust for maximum deflection. Attenuate signal generator to maintain 3.5 volt reading.
2.	Direct	"	23.7MC (Unmod.)	"	"	A3, A4	"
3.	Direct	"	25MC (Unmod.)	"	"	A5	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	24MC (10MC SWP)	22.9MC 26.4MC	Any	Vert. Amp. to Point (A). Low side to chassis.	A5	Adjust to place 26.4MC marker at 50% on the high frequency slope of the response curve as shown in figure 1. If necessary retouch A1 thru A4 for proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect a matched pair of 100KΩ resistors (± 1%) in series between points B and C . The junction of these resistors is alignment point (D) as shown on the schematic.
During sound IF alignment the common lead of the VTVM is connected to approximately -150 volts with respect to chassis. Avoid grounding or touching the VTVM case.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
5.	.01MFD	High side to pin 1 (Grid) of 6AG5 (V9). Low side to chassis.	4.5MC (Unmod.)	Any channel not used locally	DC Probe to Point (B). Common to Point (C).	A6, A7, A8	Adjust for maximum deflection.
6.	.01MFD	"	"	"	DC Probe to Point (E). Common to Point (C).	A9	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	.01MFD	High side to pin 1 (Grid) of 6AG5 (V9). Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any channel not used locally.	Vert. Amp. to Point (B). Low side to chassis.	A6, A7, A8	Disconnect stabilizer capacitor C6. Adjust for maximum amplitude and symmetry as per Fig 2. Reconnect capacitor C6.
6.	.01MFD	"	"	"	"	Vert. Amp. to Point (E). Low side to chassis.	A9	Adjust A9 so 4.5MC occurs at center of of crossover lines as per figure 3. SLIGHTLY retouch A6 for maximum amplitude and straightness of crossover lines.

THE RF TUNER PORTION OF THIS RECEIVER HAS BEEN PROPERLY ALIGNED AT THE FACTORY. THESE CIRCUITS ARE VERY STABLE AND SHOULD NOT REQUIRE ADJUSTMENT IN THE FIELD.

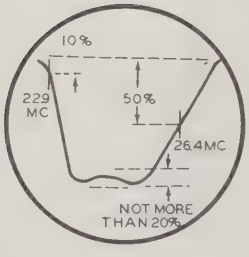


FIG.1

FIG. 2

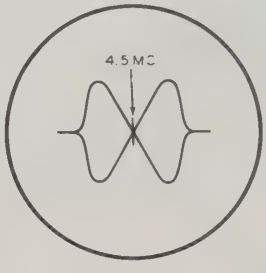
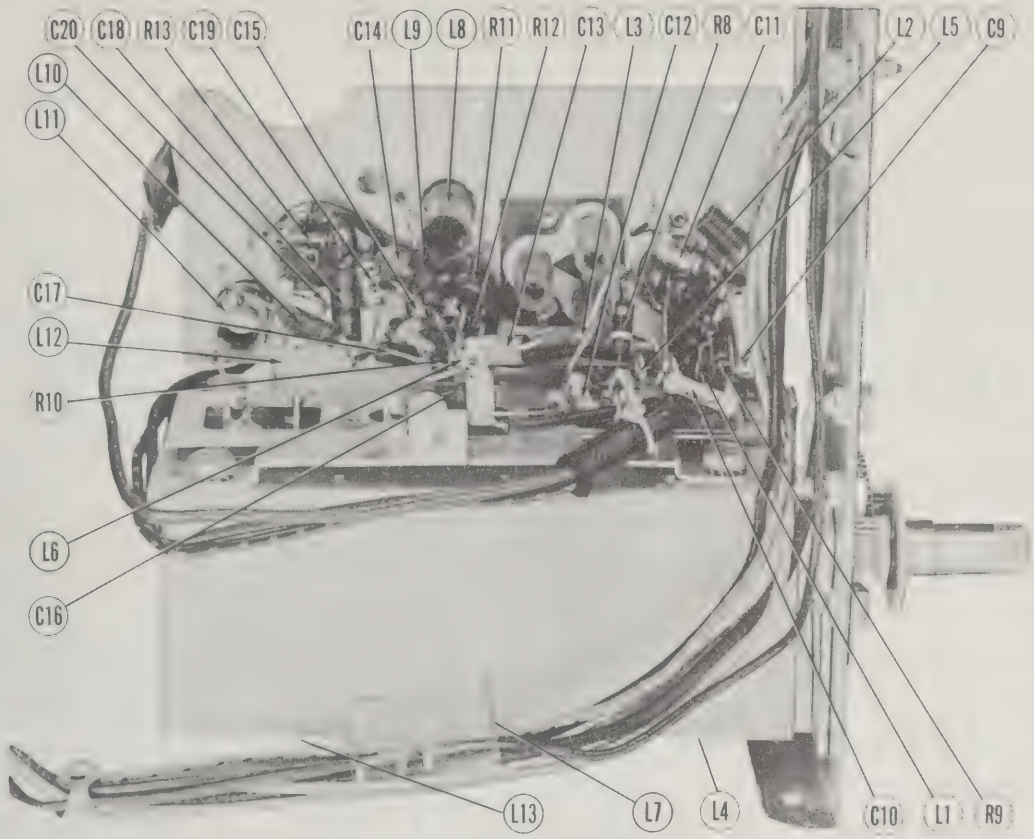
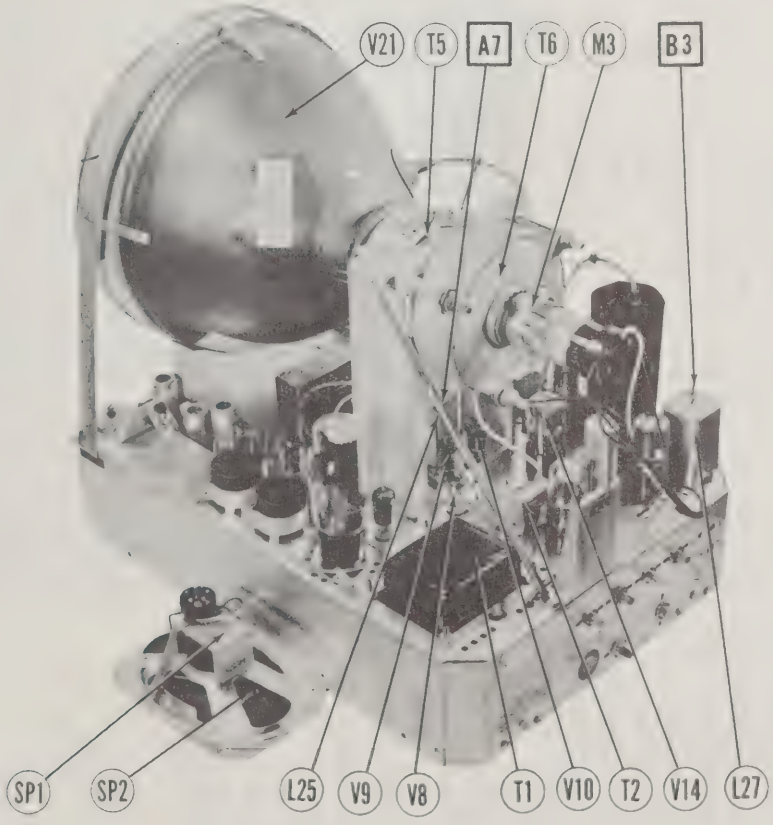


FIG. 3



INDUCTUNER - BOTTOM VIEW



CHASSIS TOP VIEW

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AB4	137VDC	0V.	0V.	6.3VAC	6.3VAC	-.4VDC	0V.		
V 2	6AK5	-2.7VDC	0V.	0V.	6.3VAC	150VDC	55VDC	0V.		
V 3	6AB4	135VDC	0V.	0V.	6.3VAC	0V.	§-4.9VDC	0V.		
V 4	6AU6	-4VDC	0V.	6.3VAC	0V.	150VDC	135VDC	.2VDC		
V 5	6AU6	-3.8VDC	0V.	6.3VAC	0V.	130VDC	130VDC	.5VDC		
V 6	6AU6	0V.	0V.	6.3VAC	0V.	127VDC	127VDC	.7VDC		
V 7	6AG5	0V.	1.3VDC	6.3VAC	0V.	135VDC	127VDC	1.3VDC		
V 8	6AL5	.2VDC	-5VDC	6.3VAC	0V.	-4.2VDC	0V.	-.1VDC		
V 9	6AU6	-4.4VDC	0V.	6.3VAC	0V.	140VDC	225VDC	1.3VDC		
V 10	12AU7	7.2VDC	0V.	1.5VDC	6.3VAC	6.3VAC	-6VDC	-3VDC	0V.	0V.
V 11	6AU6	†-.5VDC	0V.	†0V.	†6.3VAC	†45VDC	†45VDC	†0V.		
V 12	6T8	†-.3VDC	†-2VDC	†-1.6VDC	†0V.	†6.3VAC	†-1VDC	†0V.	†-.7VDC	†112VDC
V 13	6V6GT	†0V.	†6.3VAC	†180VDC	†195VDC	†-4.8VDC	†112VDC	†0V.	†0V.	
V 14	6SL7GT	†-.5VDC	†160VDC	†0V.	†-.3VDC	†210VDC	†.8VDC	†6.3VAC	†0V.	
V 15	6SN7GT	-17VDC -27VDC	100VDC 170VDC	0V.	0V.	300VDC	4VDC 17VDC	6.3VAC	0V.	
V 16	6SN7GT	-50VDC	212VDC	0V.	-35VDC	108VDC	-15VDC	6.3VAC	0V.	
V 17	6BG6G	230VDC	0V.	10VDC	.2VDC	.2VDC	490VDC	6.3VAC	325VDC	TOP CAP *
V 18	6W4GT	0V.	350VDC	480VDC	0V.	350VDC	0V.	6.3VAC	†0V.	
V 19	1B3GT	* DO NOT MEASURE.								
V 20	5U4G	0V.	380VDC	0V.	365VAC	0V.	365VAC	0V.	380VDC	
V 21	10BP4	0V.	.4VDC	PIN 10 225VDC	PIN 11 230VDC	PIN 12 6.3VAC				

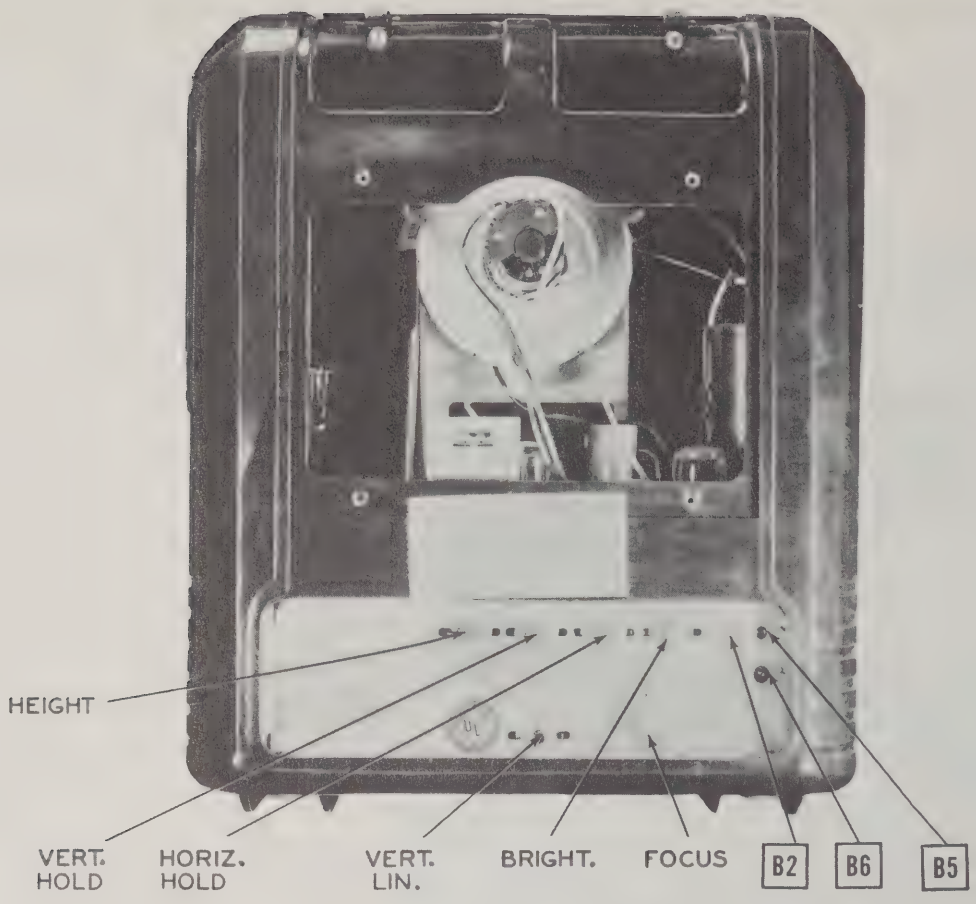
† MEASURED FROM PIN 8 OF V18.
* DO NOT MEASURE.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AB4	†225 Ω	Inf.	0Ω	.2Ω	.2Ω	540KΩ	0Ω		
V 2	6AK5	1 Meg.	0Ω	0Ω	.2Ω	†225Ω	†150KΩ	0Ω		
V 3	6AB4	†225Ω	Inf.	0Ω	.2Ω	Inf.	12KΩ	0Ω		
V 4	6AU6	340KΩ	0Ω	.2Ω	0Ω	†230Ω	†230Ω	68Ω		
V 5	6AU6	320KΩ	0Ω	.2Ω	0Ω	†340Ω	†340Ω	68Ω		
V 6	6AU6	10KΩ	0Ω	.2Ω	0Ω	†440Ω	†440Ω	68Ω		
V 7	6AG5	.3Ω	100Ω	.2Ω	0Ω	†540Ω	†540Ω	100Ω		
V 8	6AL5	180Ω	23Ω	.2Ω	0Ω	5.6KΩ	0Ω	350KΩ		
V 9	6AU6	5600Ω	0Ω	.2Ω	0Ω	†4.7KΩ	‡27KΩ	1000Ω		
V 10	12AU7	45KΩ	0Ω	300KΩ	.2Ω	.2Ω	60KΩ	100KΩ	0Ω	0Ω
V 11	6AU6	†250KΩ	†0Ω	†0Ω	†.2Ω	‡42KΩ	†40KΩ	†0Ω		
V 12	6T8	Inf.	†18KΩ	Inf.	†0Ω	†.2Ω	Inf.	†0Ω	†10 Meg.	‡ 120KΩ
V 13	6V6GT	Inf.	†.2Ω	‡850Ω	‡500Ω	†100KΩ	‡140KΩ	†0Ω	†0Ω	
V 14	6SL7GT	†1 Meg.	‡18KΩ	†0Ω	†3.3 Meg.	‡125Ω	†7KΩ	†.2Ω	†0Ω	
V 15	6SN7GT	2.5 Meg. 1.2 Meg.	#3.5 Meg. #1.5 Meg.	0Ω	2.2 Meg.	‡5KΩ	5.5KΩ 500Ω	.2Ω	0Ω	
V 16	6SN7GT	230KΩ	#120KΩ	0Ω	1 Meg.	#150KΩ	300KΩ	.2Ω	0Ω	
V 17	6BG6G	#250KΩ	0Ω	82Ω	1 Meg.	1 Meg.	#5Ω	.2Ω	‡3KΩ	TOP CAP #90Ω
V 18	6W4GT	Inf.	‡130Ω	#0Ω	Inf.	‡130Ω	Inf.	†.2Ω	†0Ω	
V 19	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP #15KΩ
V 20	5U4G	Inf.	13KΩ	Inf.	54Ω	Inf.	56Ω	Inf.	13KΩ	
V 21	10BP4	0Ω	250KΩ	PIN 10 ‡12KΩ	PIN 11 ‡15KΩ	PIN 12 .2Ω				

† MEASURED FROM PIN 8 OF V18.
‡ MEASURED FROM PIN 2 OF V20.
# MEASURED FROM PIN 3 OF V18.

1. DC Voltage measurements are at 20,000 ohms per volt: AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

HORIZONTAL OSCILLATOR ALIGNMENT

Connect a short across terminals 5 and 6 of L27.
Turn the horizontal lock trimmer (B2) fully out (counter-clockwise).
Turn the horizontal hold control to maximum clockwise.
Adjust the frequency slug (B3) until the horizontal blanking signal appears as a single vertical bar in the raster.
Turn the horizontal hold control to maximum counter-clockwise and momentarily interrupt the signal by tuning to another channel and back again.
The picture should fall into sync after approximately 90% of clockwise rotation and should remain in sync for approximately 90% additional rotation.

HORIZONTAL WAVEFORM ADJUSTMENT

Remove the short from terminals 5 and 6 of L7.
Connect the vertical amplifier input thru 50MMFD to terminal 5 of L7, connect the low side to chassis.
Adjust the waveform slug (B4) until the broad and narrow peaks of the waveform are of equal amplitude as shown in figure 4. If necessary turn the horizontal hold control to keep the picture in sync during this adjustment.

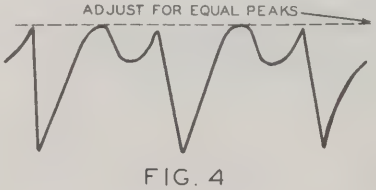
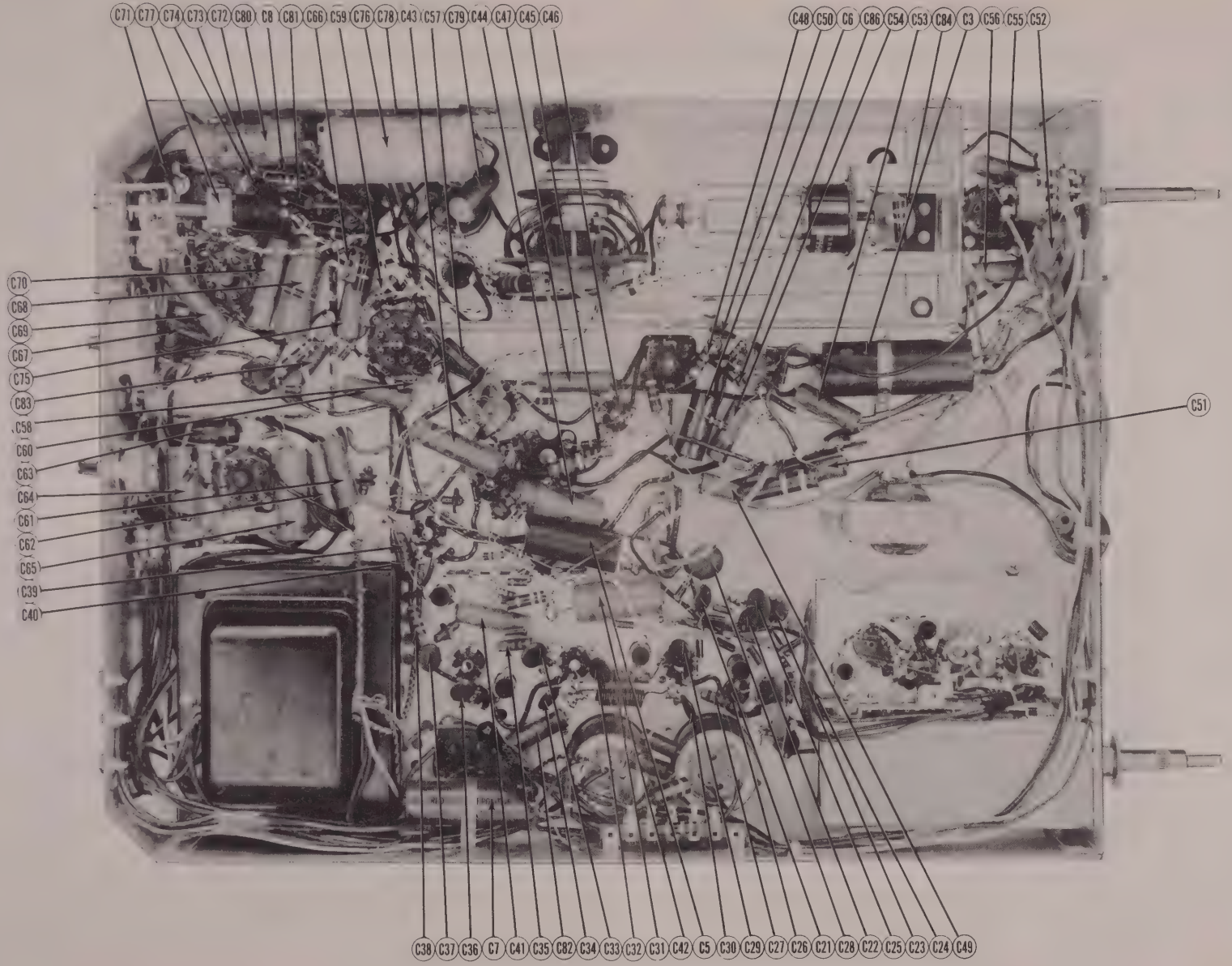


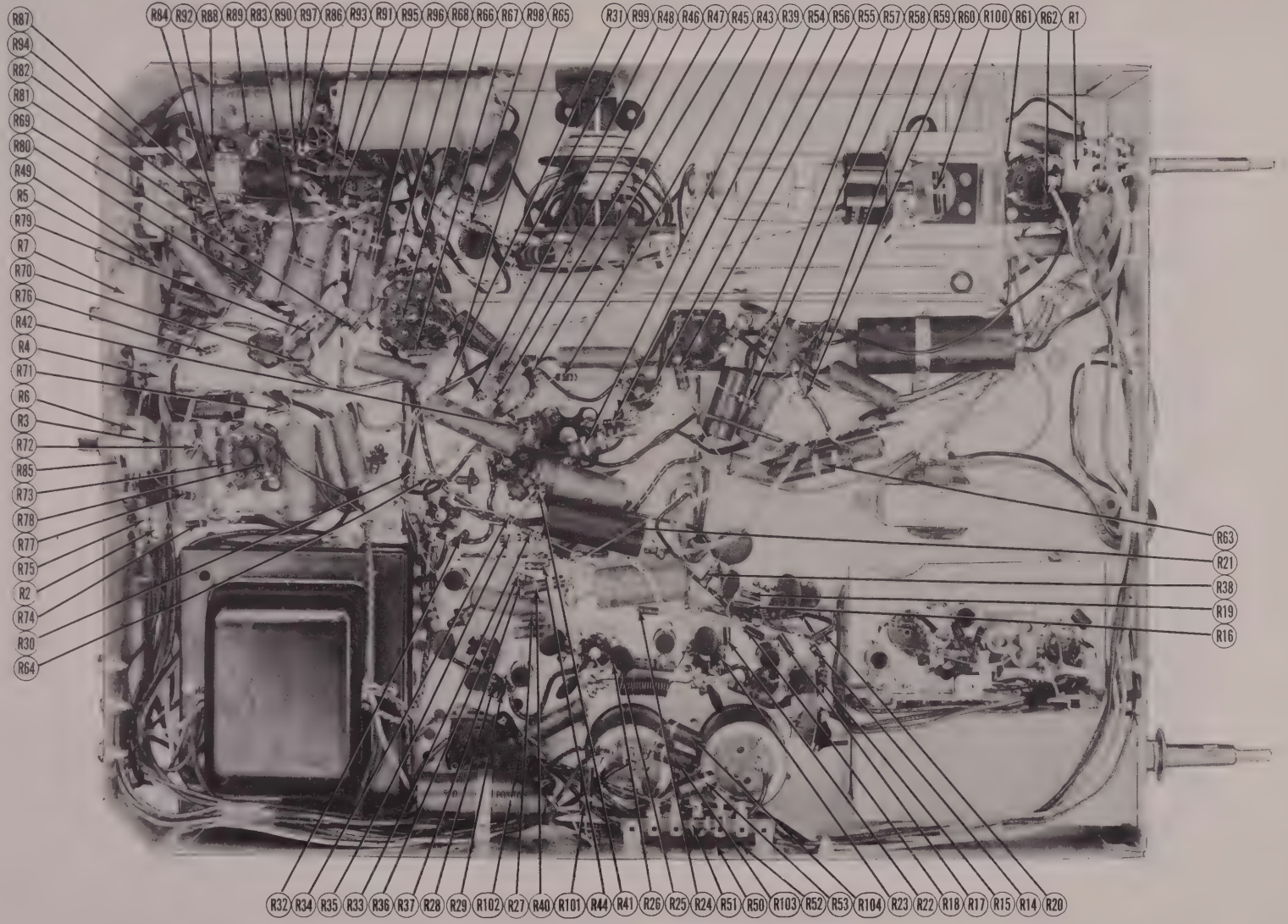
FIG. 4

HORIZONTAL LINEARITY ADJUSTMENTS

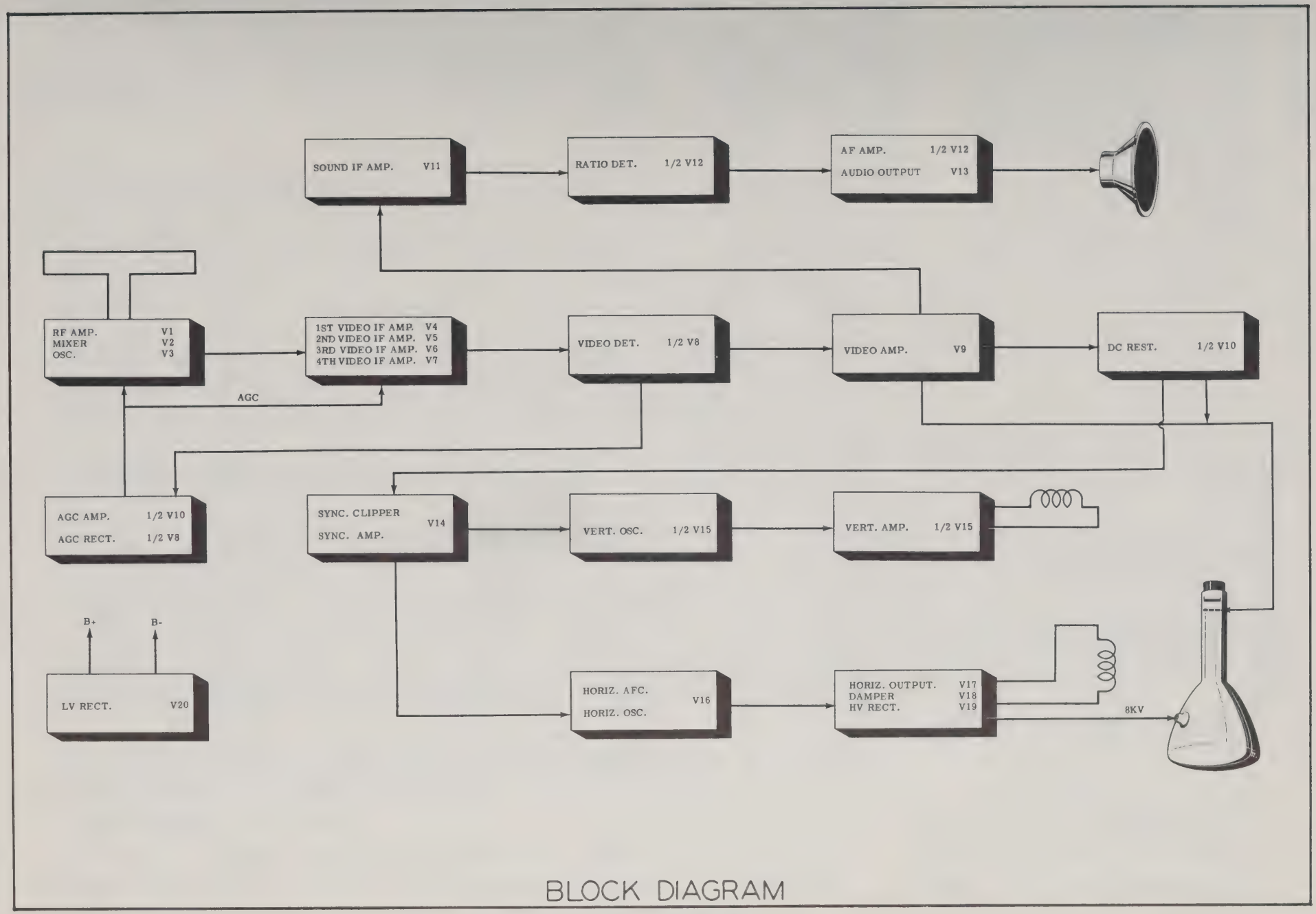
Turn the horizontal drive trimmer (B5) clockwise as far as possible without crowding the right half of the picture.
Adjust the width slug (B6) until the picture fills the mask horizontally.
Adjust the horizontal linearity slug until the picture is symmetrical from left to right. Readjustment of B5 may be necessary.



CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



BLOCK DIAGRAM

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp.	6AB4	6AB4	5CB	
V2	Mixer	6AK5	6AK5	7BD	
V3	Oscillator	6AB4	6AB4	5CB	
V4	1st Video IF	6AU6	6AU6	7BK	
V5	2nd Video IF	6AU6	6AU6	7BK	
V6	3rd Video IF	6AU6	6AU6	7BK	
V7	4th Video IF	6AG5	6AG5	7BD	
V8	Video Det.-AGC Rect.	6AL5	6AL5	6BT	
V9A	Video Amp.	6AU6	6AU6	7BK	
B	Video Amp.	6AG5	6AG5	7BD	
V10	DC Rest.-AGC	12AU7	12AU7	9A	
V11	Sound IF Amp.	6AU6	6AU6	7BK	
V12	Ratio Det.-AF Amp.	6T8	6T8	9E	
V13	Audio Output	6V6GT	6V6GT	7AC	
V14	Sync Clipper-Sync. Amp	6SL7GT	6SL7GT	8BD	
V15	Vert. Osc.-Vert. Disch. & Amp	6SN7GT	6SN7GT	8BD	
V16	Hor. AFC-Hor. Osc.	6SN7GT	6SN7GT	8BD	
V17	Hor. Output	6BG6G	6BG6G	5BT	
V18	Damper	6W4GT	6W4GT	4CG	
V19	HV Rect.	1B3GT	1B3GT	3C	
V20	LV Rect.	5U4G	5U4G	5T	
V21	Picture Tube	10BP4	10BP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CROSLEY PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	475	B-146633	AF88X			TVL-20	▲ Filter
B	40	475						▲ Filter
C2A	40	475	B-146633	AF88X			TVL-20	▲ Filter
B	40	475						▲ Filter
C3	40	300	B-146725	PRS450/40			TVA-24	Filter
C4A	10	475	B-146723	AF32X30A				■ Vert. Osc. Decoupling
B	10	475						▲ Vert. Output Decoupling
C	100	25						Vert. Output Cath. Bypass
C5	4	350	B-147047	PRS350/4			UT-43	V. Amp. Screen Bypass
C6	10	50	B-146883	PRS50/10			TVA-14	Stabilizing Cap.
C7	500	10	B-146841	PRS12/500			TVA-4	Bias Filter
C8	5	25	B-146944	PRS150/4			TVA-13	Hor. Output Cath. Bypass
C9	5000		C-137727-48	GP5000M	D6-502	GP2M-005		AGC Filter
C10	1000		C-137727-8	GP1000M	D6-102	GP2L-001		AGC Filter
C11	470		C-137727-104	GP470M	D6-471	GP2K-470		RF Filament Bypass
C12	1000		C-137727-8	GP1000M	D6-102	GP2L-001		RF Bypass
C13	15		C-137727-107	C15KNPO	D2-15	GP1K-15		RF Coupling
C14	470		C-137727-104	GP470M	D6-471	GP2K-470		Mixer Screen Bypass
C15	470		C-137727-104	GP470M	D6-471	GP2K-470		Mixer Filament Bypass
C16	1000		C-137727-8	GP1000M	D6-102	GP2L-001		RF Bypass
C17	1		W-137398-2		D2-1			Osc. Coupling
C18	5		C-137727-103	C15DN030		N030K-5		Osc. Grid Cap.
C19	6		C-137727-106	CN6DN330		N330K-6		Fixed Trimmer
C20	4		C-137727-105	CN4DNPO		NPOK-4		Fixed Trimmer
C21	5000		C-144675-2	BPD-5	D6-502	811-005	29C1	RF Bypass
C22	5000		C-144675-2	BPD-5	D6-502	811-005	29C1	RF Bypass
C23	5000		C-144675-2	BPD-5	D6-502	811-005	29C1	AGC Filter
C24	100		C-137727-108	GP100M	D6-102	GP1K-100	1FM-31	IF Coupling
C25	10000		C-144675-13	BPD-10	D6-103	811-01	36C1	AGC Filter
C26	5000		C-144675-2	BPD-5	D6-502	811-005	29C1	1st V. IF Decoupling
C27	100		C-137727-108	GP100M	D6-101	GP1K-100	1FM-31	IF Coupling
C28	10000		C-144675-13	BPD-10	D6-103	811-01	36C1	AGC Filter
C29	5000		C-144675-2	BPD-5	D6-502	811-005	29C1	2nd V. IF Decoupling
C30	5000		C-144675-2	BPD-5	D6-502	811-005	29C1	2nd V. IF Fil. Bypass
C31	100		C-137727-108	GP100M	D6-101	GP1K-100	1FM-31	IF Coupling
C32	5000		C-144675-2	BPD-5	D6-502	811-005	29C1	3rd V. IF Cath. Bypass
C33	5000		C-144675-2	BPD-5	D6-502	811-005	29C1	3rd V. IF Decoupling
C34	5000		C-144675-2	BPD-5	D6-502	811-005	29C1	3rd V. IF Fil. Bypass
C35	100		C-137727-108	GP100M	D6-101	GP1K-100	1FM-31	IF Coupling
C36	5000		C-144675-2	BPD-5	D6-502	811-005	29C1	4th V. IF Cathode Bypass
C37	5000		C-144675-2	BPD-5	D6-502	811-005	29C1	4th V. IF Decoupling
C38	100		C-137727-108	GP100M	D6-101	GP1K-100	1FM-31	IF Coupling
C39	5		C-137727-103	GP5K	D2-4.7	NPOK-5	MS-55	V. Diode Filter
C40	5000		C-144675-2	BPD-5	D6-502	811-005	29C1	Bias Filter
C41	.015	200	39001-14	P288-015			TM-12	AGC Filter
C42	.25	200	39001-87	P488-25			TC-3	AGC Filter
C43	.05	400	39001-17	P488-05			TM-15	Video Coupling
C44	.1	400	39001-19	P488-1			TM-1	Video Coupling
C45	100		C-137727-108	GP100M	D6-101	GP1K-100	1FM-31	S. IF Coupling
C46	5000		C-144675-2	BPD-5	D6-502	811-005	29C1	S. IF Decoupling
C47	.02	400	39001-80	P488-02			TM-12	S. IF Decoupling
C48	1000		C-137727-110	GP1000K	D6-102	GP2L-001	1FM-21	Diode Load Cap.
C49	.005	600	39001-11	P688-005	D6-502	811-005	TM-25	De-emphasis
C50	5000		C-144675-2	BPD-5	D6-502	811-005	29C1	RF Bypass
C51	.01	400	39001-13	P488-01	D6-103	811-01	TM-11	Audio Coupling
C52	.001	600	39001-7	P688-001	D6-102	GP2L-001	TM-21	Tone Compensation
C53	.01	400	39001-13	P488-01	D6-103	811-01	TM-11	Audio Coupling
C54	.00025	600	39001-74	1468-00025	D6-251	GP2K-250	TC-325	AF Amp. Plate Bypass
C55	.02	400	39001-80	P488-02			TM-12	Audio Coupling
C56	.005	600	39001-11	P688-005	D6-502	811-005	TM-25	Output Plate Bypass
C57	.01	400	39001-13	P488-01	D6-103	811-01	TM-11	Sync. Coupling
C58	120	500	B-137498-17	1469-00015	D6-121	GP2K-120	MS-315	Sync. Coupling
C59	390	500	B-137498-28	1469-0004	D6-391	GP2K-390	MS-34	Sync. Sep. Cath. Bypass
C60	.002	600	39001-74	P688-002	D6-202	GP2M-002	TM-22	Integrator Net.
C61	.005	600	39001-11	P688-005	D6-502	811-005	TM-25	Integrator Net.
C62	.005	600	39001-11	P688-005	D6-502	811-005	TM-25	Integrator Net.
C63	.0047	600	39478-39	P688-0047	D6-472	GP2M-0047	TM-25	Vert. Osc. Grid Cap.
C64	.1	400	C-146434-3	P488-1			TM-1	Vert. Discharge

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CROSLEY PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C65	.1	400	39001-19	P488-1			TM-1	Vert. Sweep Coupling
C66	120	500	B-137498-17	1469-00015	D6-121	GP2K-120	MS-315	Hor. Sync. Coupling
C67	.0022	600	39477-37	P688-0022	D6-222	GP2M-0022	TM-22	Hor. Sync. Coupling
C68	.25	200	39001-87	P488-25			TC-3	AFC Filter
C69	.02	200	39001-80	P488-02			TM-12	AFC Filter
C70	.05	400	39001-17	P488-05			TM-15	Hor. AFC Plate Bypass
C71	200	500	B-137498-47	1468-0002	D6-201	GP2K-200	1FM-32	Hor. Osc. Grid Cap.
C72	.01	400	39001-17	P488-01	D6-103	811-01	TM-11	Fixed Trimmer
C73	2000	500	B-137498-48	1467-002	D6-202	GP2M-002	1FM-22	Hor. Discharge
C74	390	500	B-137498-28	1469-0004	D6-391	GP2K-390	MS-34	Hor. Sweep Coupling
C75	.05	600	39001-17	P688-05			TM-15	Hor. Output Screen Bypass
C76	.5	600	39001-23	684-5			TC-5	Decoupling
C77	390	500	B-137498-49	1469-0004	D6-391		MS-34	Fixed Trimmer
C78	.1	200	C-146434-5	P288-1			TM-1	Damper Filter
C79	.05	200	C-146434-4	P288-05			TM-15	Damper Filter
C80	.5	200	B-144899-2	P288-5			TC-5	Hor. Sweep Coupling
C81	5		C-137727-103	GP5M	D2-4.7	NPOK-5	MS-55	Hor. Feedback
C82	.005	600	39001-11	P688-005	D6-502	811-005	TM-25	RF Bypass
C83	.005	600	39001-11	P688-005	D6-502	811-005	TM-25	RF Bypass
C84	500	10000	B-137477-1	HV-500	TV1-50t			HV Filter
C85	220	1500	W-160111					Line Filter
C86	2.2		B-137398-4		D2-2.2			Neutralizing

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	INSTALLATION NOTES
R1A	1 Meg.	½	C-146856	B13-137 *	C-146856		Volume control-panel
B	100KΩ	½		B11-108 *			Contrast control-rear
C	Shaft End			E-187 *			Attach per instructions in "Concentrikit".
D	Switch			76-1 *			Attach per instructions in "Concentrikit".
R2A	2.5 Meg.	½	B-144259	Q11-239	M-84-8	AN-83	Height control
B	Shaft		Not Req.	Not Req.	Not Req.	AK-1	Attach to R2A per instructions
R3A	1.5 Meg.	½	B-146799	Q11-138	M-83-8	AN-75	Vert. hold control
B	Shaft		Not Req.	Not Req.	Not Req.	AK-1	Attach to R3A per instructions
R4A	50KΩ	½	B-146797	Q11-123	M-44-8	AN-31	Horiz. hold control
B	Shaft		Not Req.	Not Req.	Not Req.	AK-1	Attach to R4A per instructions
R5	40KΩ	½	B-146798		M-43-8		Brightness control
R6A	500KΩ	½	B-144260	Q11-114	M-19-8	AN-10	Vert. linearity control
B	Shaft		Not Req.	Not Req.	Not Req.	AK-1	Attach to R6A per instructions
R7	650Ω	4	B-147083		10-660		Focus control-Wire Wound

* Additional parts to be used with "Concentrikit".

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ARE ± 10% UNLESS OTHERWISE STATED.
R8	3900Ω	½	39374-32	BTS-3900	RF Plate Coil Shunt
R9	220KΩ	½	39374-53		AGC Network
R10	1 Meg.	½	39374-61		Mixer Grid
R11	10KΩ	½	39374-37		Mixer Plate Coil Shunt
R12	150KΩ	½	39374-51		Mixer Screen
R13	12KΩ	½	39374-38		Osc. Grid
R14	15KΩ 5%	½	39375-77		1st Video IF Grid
R15	68Ω	½	39374-11		1st Video IF Cathode
R16	100Ω 20%	½	39373-14		Decoupling Network
R17	100Ω 20%	½	39373-14		Decoupling Network
R18	100Ω 20%	½	39373-14		Decoupling Network
R19	10KΩ 20%	½	39373-54	BTS-10K	AGC Network
R20	1000Ω 20%	½	39373-33	BTS-1000	AGC Network
R21	100Ω 20%	½	39373-14		Decoupling Network
R22	8200Ω 5%	½	39375-71		2nd Video IF Grid
R23	68Ω	½	39374-11		2nd Video IF Cathode
R24	100Ω 20%	½	39373-14		Decoupling Network
R25	10KΩ 5%	½	39375-73		3rd Video IF Grid
R26	68Ω	½	39374-11		3rd Video IF Cathode
R27	100Ω 20%	½	39373-14		Decoupling Network
R28	10KΩ 5%	½	39375-73		4th Video IF Coil Shunt
R29	100Ω	½	39373-14		4th Video IF Cathode
R30	5600Ω 5%	½	39375-67	BTS-5600-5%	Video Det. Diode Load
R31	100KΩ	½	39374-49	BTS-100K	AGC Amp. Grid
R32	180Ω	½	39374-16	BW-½-180	AGC Rect. Diode Load
R33	150KΩ	½	39374-51	BTS-150K	Voltage Divider
R34	33KΩ	½	39374-43	BTS-33K	AGC Network
R35	270KΩ	½	39374-54	BTS-270K	AGC Network
R36	100KΩ	½	39374-49	BTS-100K	Voltage Divider
R37	220KΩ	½	39374-45	BTS-220K	Voltage Divider
R38	8200Ω	½	39374-36	BTS-8200	AGC Network
R39	39KΩ	2	39374-220	BT-2-39K	Video Amp. Screen
R40	4700Ω 5%	1	39375-213	BTA-4700-5%	Video Amp. Plate
R41	6800Ω	½	39374-35	BTS-6800	Peaking Coil Shunt
R42	68KΩ	1	39374-135	BTA-68K	Voltage Divider
R43	820KΩ	½	39374-60	BTS-820K	Voltage Divider
R44	3300Ω	½	39374-31	BTS-3300	Isolation
R45	47KΩ	½	39374-45	BTS-47K	DC Rest. Load
R46	150KΩ	½	39374-51	BTS-150K	DC Rest. Load-See Note 1
R47	150KΩ	½	39374-51	BTS-150K	DC Rest. Load-See Note 2
R48	100KΩ	½	39374-49	BTS-100K	Picture Tube Grid
R49	1800Ω	½	39374-28	BTS-1800	Voltage Divider
R50	33KΩ	2	39374-219	BT-2-33K	Voltage Divider
R51	4700Ω	1	39374-121	BTA-4700	Brightness Control Shunt
R52	39KΩ	2	39374-220	BT-2-39K	Voltage Divider
R53	12KΩ	2	39374-214	BT-2-12K	Voltage Divider
R54	220KΩ 20%	½	39373-80		Sound IF Grid
R55	56KΩ	½	39374-134		Sound IF Decoupling
R56	47KΩ	½	39374-45		Voltage Divider
R57	18KΩ 5%	½	39375-79	BTS-18K-5%	Ratio Det. Diode Load
R58	27KΩ	½	39374-42	BTS-27K	De-emphasis
R59	10 Meg. 20%	½	39373-107	BTS-10 Meg.	AF Grid
R60	100KΩ	½	39374-49	BTS-100K	AF Plate

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R61	2.2 Meg. 5%	½	39375-129	BTS-2.2 Meg. 5%	Voltage Divider
R62	100KΩ 5%	½	39375-97	BTS-100K-5%	Output Grid
R63	390Ω	2	39374-196	BW-2-390	Filter
R64	5.6 Meg.	½	39375-139	BTS-5.6 Meg.	Voltage Divider
R65	1 Meg. 20%	½	39373-92	BTS-1 Meg.	Sync. Clipper Grid
R66	18KΩ	½	39374-40	BTS-18K	Sync. Clipper Plate
R67	3.3 Meg. 20%	½	39373-100	BTS-3.3 Meg.	Sync. Amp. Grid
R68	6800Ω	½	39374-35	BTS-6800	Sync. Amp. Cathode
R69	22KΩ	½	39374-41	BTS-22K	Integrator Network
R70	8200Ω	½	39374-36	BTS-8200	Integrator Network
R71	8200Ω	½	39374-36	BTS-8200	Integrator Network
R72	1.2 Meg.	½	39374-63	BTS-1.2 Meg.	Vert. Osc. Grid
R73	10KΩ 20%	½	39373-54	BTS-10K	Vert. Osc. Transformer Shunt
R74	1.5 Meg.	½	39374-65	BTS-1.5 Meg.	Vert. Osc. Plate
R75	270KΩ	1	39374-142	BTA-270K	Voltage Divider
R76	3300Ω	½	39374-31	BTS-3300	Vert. Peaking
R77	560Ω	½	39374-32	BTS-560	Vert. Amp. Cathode
R78	2.2 Meg.	½	39374-69	BTS-2.2 Meg.	Vert. Amp. Grid
R79	4700Ω	1	39374-121	BTA-4700	Vert. Amp. Decoupling-See Note 3
R80	820KΩ	½	39374-60	BTS-820K	Horiz. AFC Grid
R81	150KΩ	½	39374-51	BTS-150K	Horiz. AFC Cathode
R82	150KΩ	½	39374-51	BTS-150K	Horiz. AFC Cathode
R83	8200Ω	½	39374-36	BTS-8200	Horiz. AFC Filter Network
R84	2.7 Meg.	½	39374-71	BTS-2.7 Meg.	Voltage Divider
R85	68KΩ	½	39374-47	BTS-68K	Voltage Divider
R86	150KΩ	½	39374-139	BTA-150K	Voltage Divider
R87	100KΩ 5%	½	39375-97	BTS-100K-5%	Horiz. Osc. Grid
R88	10KΩ	½	39374-37	BTS-10K	Horiz. Osc. Transformer Shunt
R89	22KΩ	½	39374-41	BTS-22K	Horiz. Osc. Transformer Shunt
R90	120KΩ	1	39374-138	BTA-120K	Horiz. Osc. Plate
R91	150KΩ	½	39374-51	BTS-150K	Horiz. AFC Filter Network
R92	560KΩ	½	39374-58	BTS-560K	Feedback
R93	47Ω 20%	½	39373-9		Parasitic Supp.
R94	1 Meg. 20%	½	39373-190	BTS-1 Meg.	Horiz. Output Grid
R95	82Ω	1	39374-100	BW-1-82	Horiz. Output Cathode
R96	2700Ω	1		BTA-2700	Horiz. Output Screen-See Note 3
R97	1000Ω	½	39374-25	BTS-1000	Filter
R98	56KΩ	½	39374-46	BTS-56K	Filter
R99	15KΩ	2			Current Limiting
R100	220KΩ	1	39374-141		HV Filter
R101	22Ω	1	39374-93	BW-1-22	Bias Network
R102	30KΩ	10			Bleeder-Wire Wound-See Note 2
R103	220Ω	2	39374-193	BW-2-220	Focus Coil Shunt
R104	220Ω	2	39374-193	BW-2-220	Focus Coil Shunt

Note 1. Some models use 270KΩ resistor in this application.
Note 2. Not used in all models.
Note 3. Some models use 8200Ω, 1 watt resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T1	117VAC ③ 2.35A	740 VCT .2ADC	5VAC ③ 3A	6.3VAC ③ 4.5A SEC. 4 6.3VAC ③ 2.5A	C-146683	P-6314 and P-5014 ③	P-3066	TP-392 ②

② Drill new mounting holes.
③ Use P-5014 for 6.3V ③ 2.5A

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	NOTES
T2	176Ω	720Ω	B-146842-1	A-8121 ①	A-4000 ①	TBO-1 ①	Vert. Block Osc. Trans.
T3	70Ω	152Ω	AC-146756				Horiz. Output Trans.
	SEC. 2	SEC. 3					
	8.9Ω	.0Ω					
	Tap ④	SEC. 4					
	3.3Ω	2.75Ω CT					
T4	680Ω	20Ω	B-146989	A-8112 ①	A-3035 ②	TSO-5	Vert. Output Trans.
T5A	13Ω		AB-146996	DY-1	MD-3		Horiz. Deflection Coil
B	65Ω						Vert. Deflection Coil
T6	240Ω		AB-146758		MF-2		Focus Coil

① Drill one new mounting hole.
② Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	INSTALLATION NOTES
T7	5.4KΩ	4.3Ω	360Ω	.6Ω	B-142890	A-3849	A-3019	RO-9	

SPEAKER

ITEM No.	RATINGS: FIELD RES.	RATINGS: V. C. IMP.	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA: QUAM PART No.	NOTES
SP1	50Ω	4.3Ω	AD-146528		69E50S	
	CONE DIA.	V. C. DIA.				
SP2	6" x 4"	9/16"				

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	CROSLEY PART No.	MEISSNER PART No.	
L1	Ant. Coil	.1Ω		AW-146735		
L2	Fil. Choke	0Ω		AW-146858		
L3	RF End Inductor	0Ω		AW-146985		Part of inductuner D-146656
L4	RF Plate	0Ω				
L5	RF Coupling	0Ω		AW-146988		
L6	RF End Inductor	0Ω		AW-146987		Part of inductuner D-146656
L7	Mixer Grid	0Ω				
L8	1st Video IF	1.2Ω		AW-146755		
L9	RF Choke	.1Ω		AW-146735		
L10	RF Choke	.1Ω		AW-147015		
L11	Osc. Shunt	0Ω		AW-146986		
L12	Osc. End Inductor	0Ω		AW-146986		Part of inductuner D-146656
L13	Osc. Coil	0Ω				
L14	1st Video IF Coupling	.2Ω		AW-146763		Green dot identification
L15	2nd Video IF	.2Ω		AW-146582		Yellow dot identification
L16	3rd Video IF	.2Ω		AW-146583		Red dot identification
L17	RF Choke	5Ω		AW-146570		White dot identification
L18	4th Video IF	.2Ω		AW-146582		Yellow dot identification
L19	RF Choke	5Ω		AW-146570		White dot identification
L20	5th Video IF	.2Ω		AW-147022		Orange dot identification
L21	Peaking	10.5Ω		AW-147043		Wound on 22KΩ resistor
L22	Peaking	19.5Ω		AW-146889		
L23	Peaking	11Ω		AW-147043		
L24	Peaking	19.5Ω		AW-146889		
L25	Sound IF	3Ω	2.5Ω	AC-146782		
L26	Ratio Det. Trans.	4.5Ω	.2Ω	C-146874		
L27	Horiz. Osc. Trans.	130Ω	37Ω	AC-146698		
L28	Horiz. Lin.	16.7Ω		AW-147004		
L29	Horiz. Size	3.2Ω		AW-146984		
L30	Fil. Choke	0Ω		AW-146855		

MISCELLANEOUS

ITEM No.	PART NAME	CROSLEY PART No.	NOTES
M1	RF Tuner	AW-146843	RF Tuner Assembly Complete
M2	Fuse	W-144898-1	Type GJC .2A 250V
M3	Ion Trap	B-146480	
	Knob	AB-146638	Tuning
	Knob	AW-146637	Volume
	Knob	AW-146640	Off-On-Contrast

DISASSEMBLY INSTRUCTIONS

1. Remove push-on type control knobs from both tuning shafts.
2. Remove four snap-on type screw tap covers from front of plastic cabinet.
3. Remove four phillips type screws from inset holes holding front cover.
4. Remove two 1/4" hex head bolts on bottom holding front cover and remove cover.
5. Disconnect speaker plug.
6. Disconnect built-in antenna plug.
7. Remove four 7/16" hex head bolts holding chassis and remove chassis from front.
8. Remove two phillips screws holding speaker from front cover.

AGC ADJUSTMENTS

Turn the set on and tune in a local TV station.

Connect the vertical amplifier input of an oscilloscope across R30.

Adjust the spacing of the "GIMMICK" (B1) for a 3.5 volt peak to peak pattern on the oscilloscope.

PHOTOFACT* Folder

DUMONT MODELS
RA-105B (SUSSEX), RA-108A
(BRADFORD OR MANSFIELD)

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MODEL RA-108A

DUMONT MODELS
RA-105B (SUSSEX), RA-108A
(BRADFORD OR MANSFIELD)

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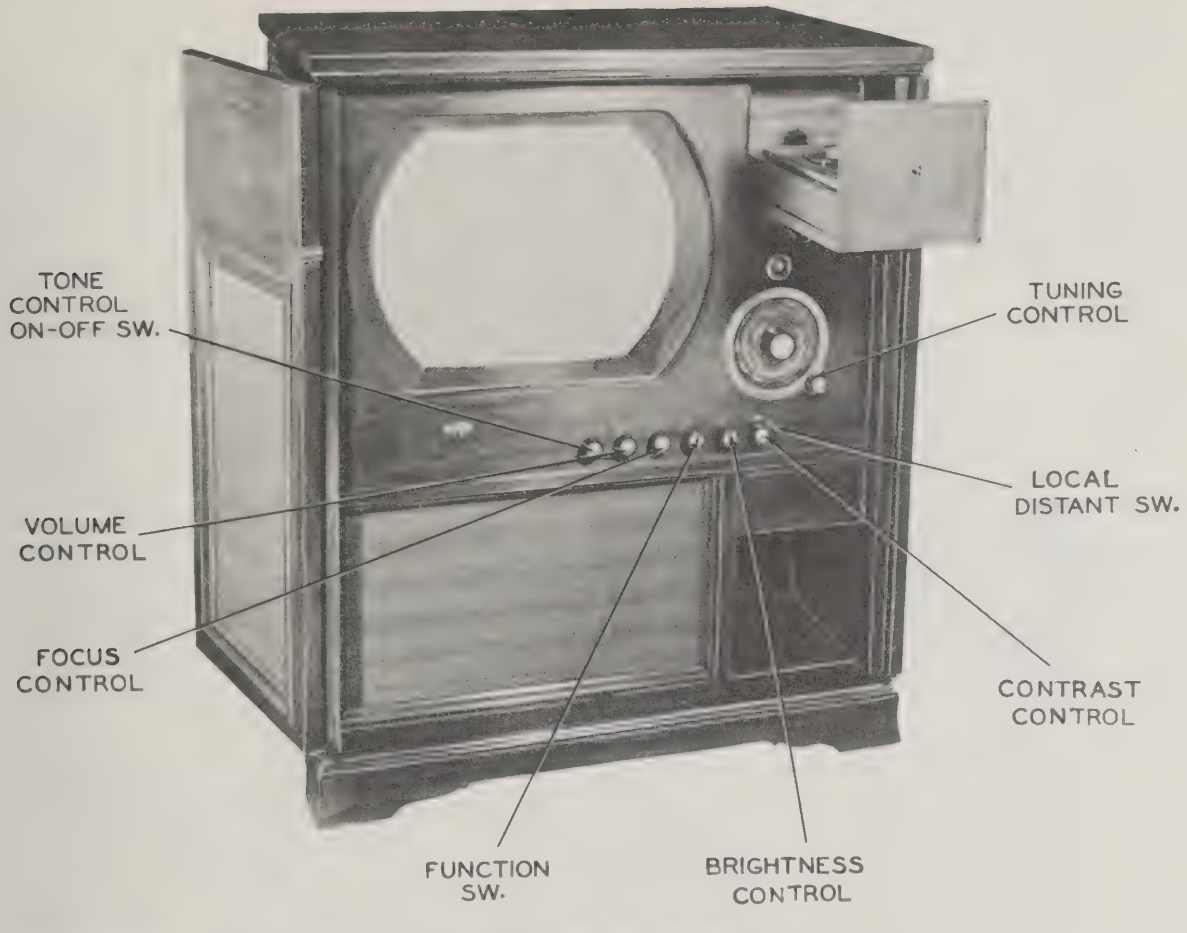

DUMONT MODEL RA-108A (BRADFORD)

TRADE NAME	Dumont, Models RA-105B (Sussex), RA-108A (Bradford or Mansfield)
MANUFACTURER	Allen B. Dumont Laboratories, Inc., 2 Main Ave., Passiac, New Jersey
TYPE SET	TV-FM Receiver
TUBES	Thirty Six (Model RA-108A) Thirty Five (Model RA-105B)
POWER SUPPLY	110-120 Volts AC-60 Cycle — RATING 4.2 Amp. at 117 Volts AC
TUNING RANGE—	44 thru 216MC (Continuous Tuning)

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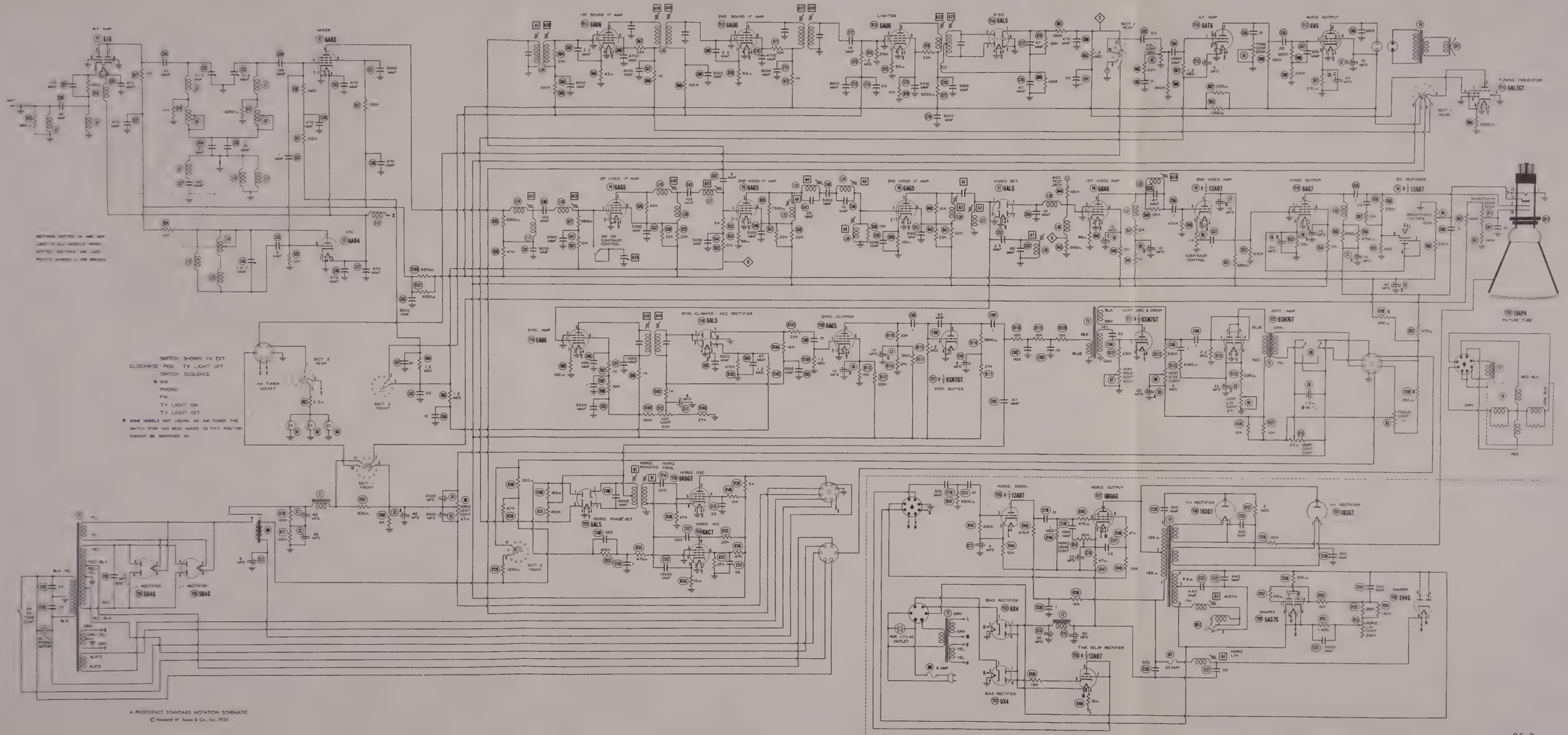
DUMONT
MODELS RA-105B, RA-108A



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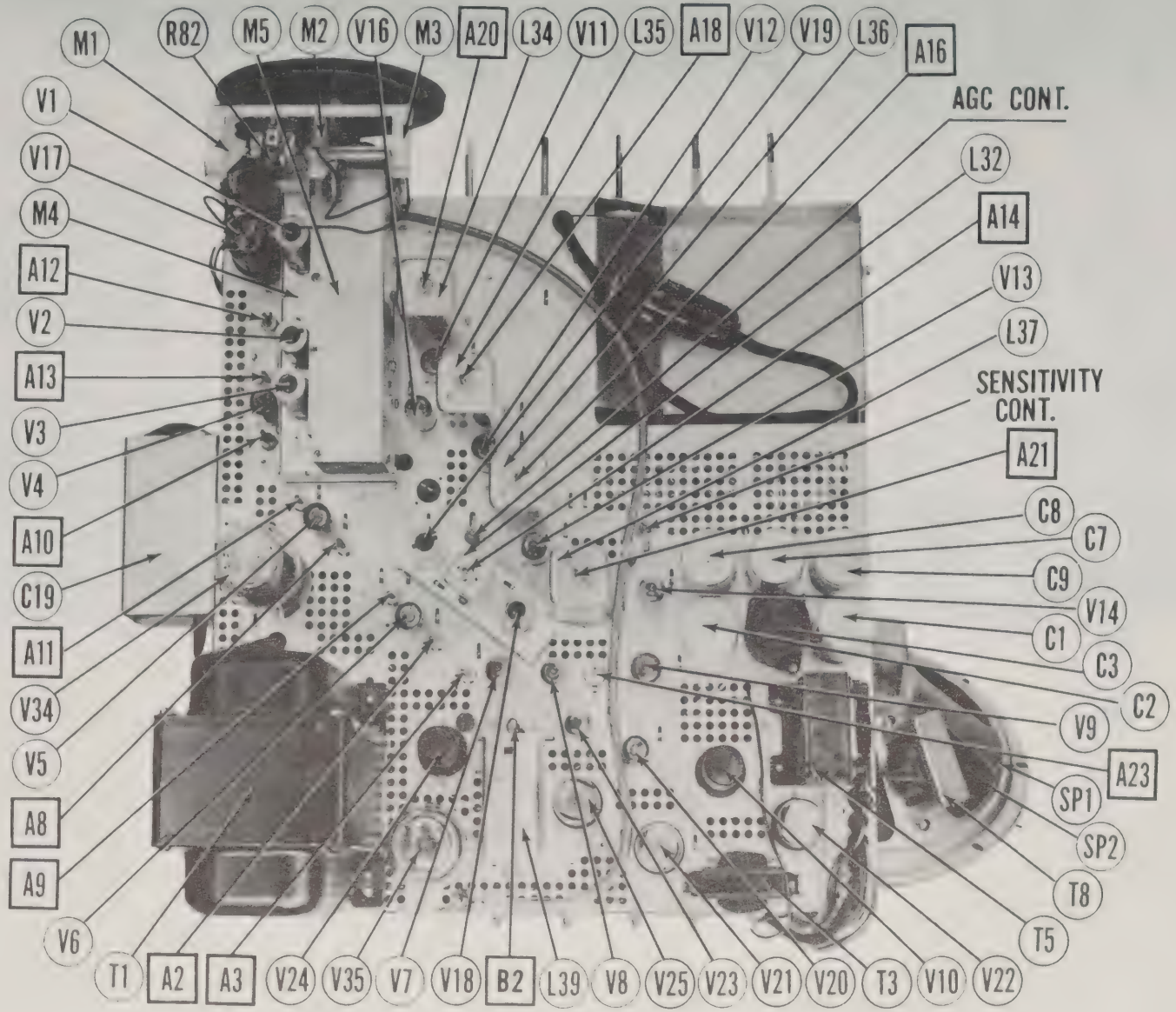
MODELS RA-105B, RA-108A



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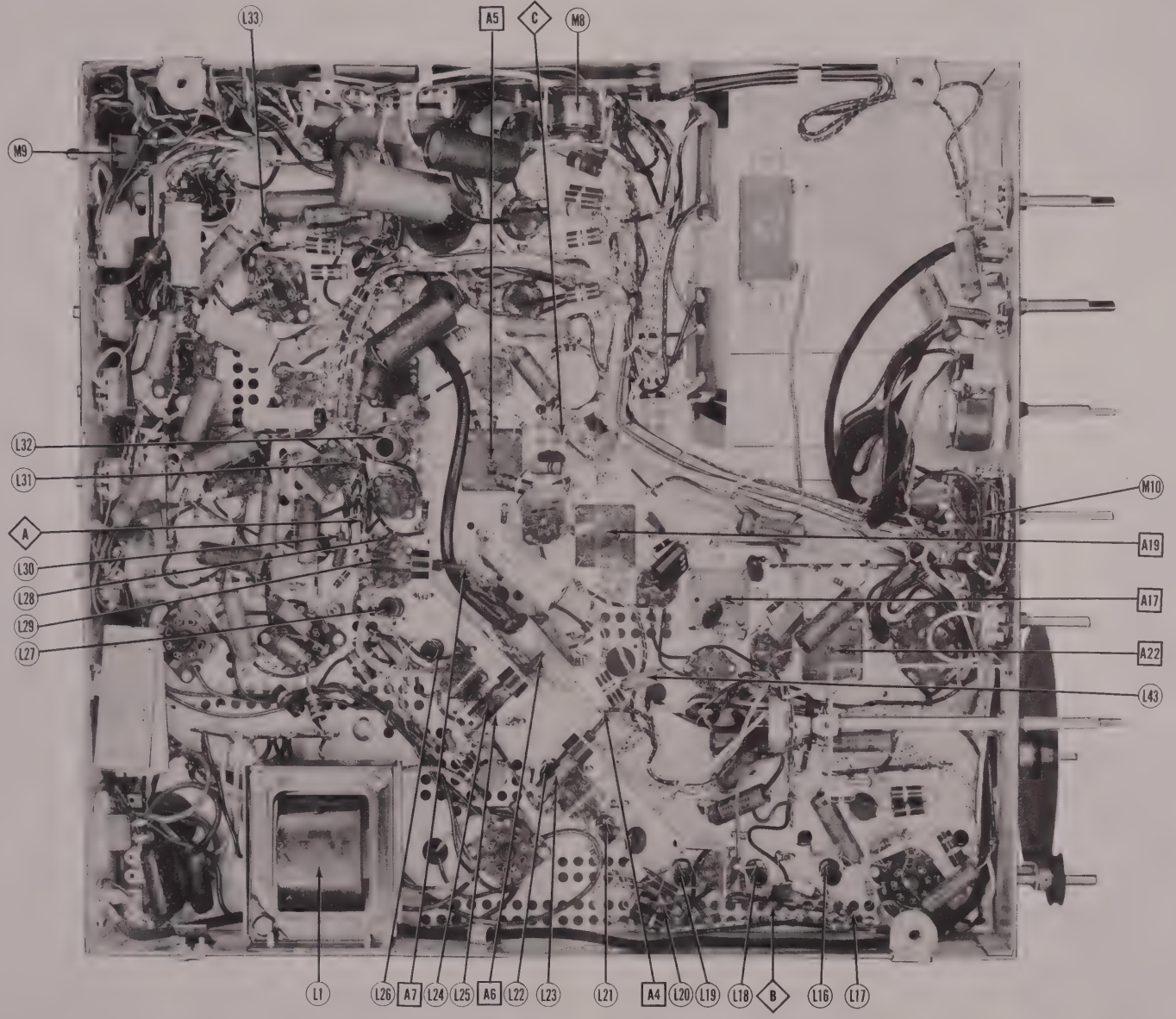
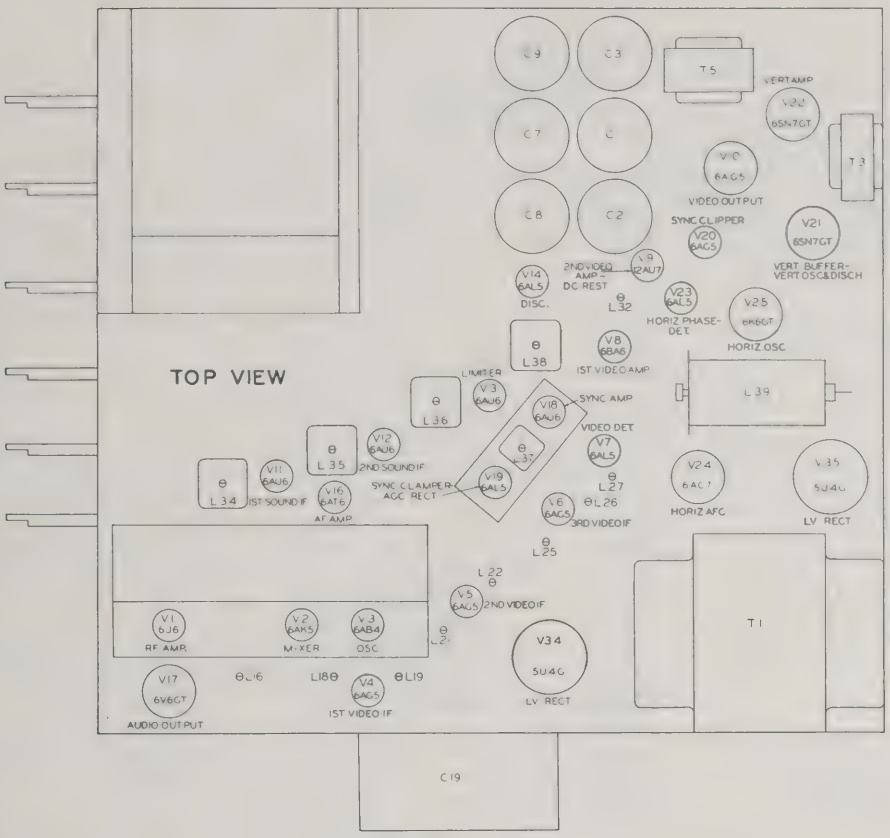
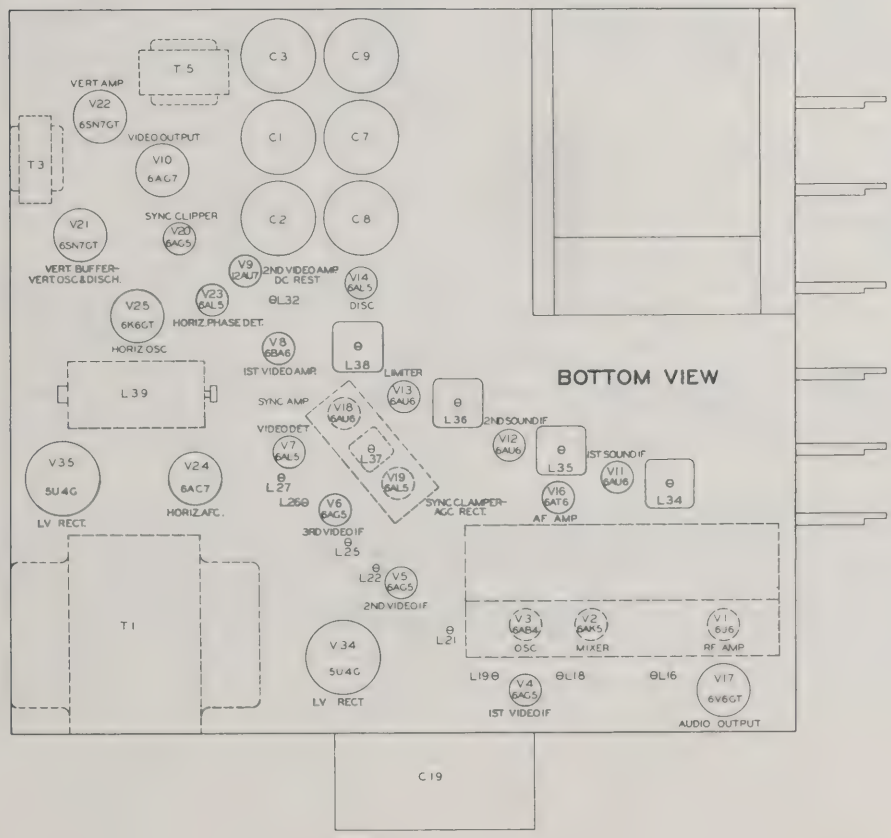


CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION





TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

During alignment the high voltage connector should be securely taped.
Do not attempt to operate this set without all of the interconnecting cables in place.

VIDEO IF ALIGNMENT

Remove the local oscillator tube (V3) from its socket to prevent erroneous indications.
Connect the negative lead of a 3 volt battery to point (B), connect the positive lead to chassis.
Turn the "LOCAL-DISTANCE" switch to "LOCAL".
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	.005MFD	High side to pin 1 (Grid) of 6AG5 (V6). Low side to chassis.	24MC (10MC SWP)	21.9MC 25.65MC 26.4MC	Any	Vert. Amp. to Point (A). Low side to chassis.	A1, A2, A3	Adjust for response curve similar to Fig. 2 with markers as shown. A1 effects the bandwidth, A2 and A3 effect the marker placement.
2.	.005MFD	High side to pin 1 (Grid) of 6AG5 (V4). Low side to chassis.	Not used	21.9MC (400 ∿ AM Mod.)	"	"	A4, A5	Adjust for MINIMUM 400 ∿ indication on scope.
3.	.005MFD	"	"	27.9MC (400 ∿ Mod.)	"	"	A6	"
4.	.005MFD	"	"	20.4MC (400 ∿ Mod.)	"	"	A7	"
5.	.005MFD	High side to pin 1 (Grid) of 6AG5 (V5). Low side to chassis.	24MC (10MC SWP)	22.4MC 22.9MC 25.65MC 26.4MC	"	"	A8, A9	Adjust for response curve similar to Fig 3 with markers as shown.
6.	.005MFD	High side to pin 1 (Grid) of 6AG5 (V4). Low side to chassis.	"	21.9MC 22.9MC 26.4MC	"	Vert. Amp. thru probe detector (Fig. 1) to pin 5 (plate) of 6AG5 (V5). Low side to chassis.	A10, A11	Adjust for response curve similar to Fig. 4 with markers as shown.
7.	.005MFD	"	"	22.4MC 22.9MC 25.65MC 26.4MC	"	Vert. Amp. to Point (A). Low side to chassis.		Check for response curve similar to Fig. 5. If necessary SLIGHTLY retouch A10 and A11 for optimum response.
8.	Direct	High side to an ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	"	22.4MC 22.9MC 25.65MC 26.4MC	"	"	A12, A13	Adjust for response curve similar to Fig 6 with markers as shown.
9.	Direct	"	Not used	26.4MC (Unmod.)	"	Use VTVM. DC Probe to point (B). Common to chassis.	A14, A15	Adjust for maximum deflection.

SOUND IF ALIGNMENT

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	.005MFD	High side to pin 1 (Grid) of 6AU6 (V12). Low side to chassis.	21.9MC (1MC SWP)	21.9MC	Any	Vert. Amp. thru probe detector (Fig 1) to pin 5 (plate) of 6AU6 (V13). Low side to chassis.	A16, A17	Adjust for maximum amplitude and symmetry as per Fig. 7.
11.	.005MFD	High side to pin 1 (Grid) of 6AU6 (V11). Low side to chassis.	"	"	"	"	A18, A19	"
12.	.005MFD	High side to pin 1 (Grid) of 6AG5 (V4). Low side to chassis.	"	"	"	"	A20	"
13.	.005MFD	"	"	"	"	Vert. Amp. to Point (C) Low side to chassis.	A21, A22	Adjust A21 so 21.9MC marker occurs at center of diagonal line as per Fig 8. Adjust A22 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
14.	.005MFD	High side to pin 1 (Grid) of 6BA6 (V8). Low side to chassis.	Not used	4.5MC (400 ∿ AM Mod.)	Any	Vert. Amp. thru probe detector (Fig. 1) to pin 2 (Grid) of picture tube.	A23	Adjust for MINIMUM 400 ∿ response on scope.

THE OSCILLATOR, RF AND MIXER CIRCUITS IN THIS RECEIVER ARE PRE-SET AT THE FACTORY AND ARE VERY STABLE; THEY SHOULD NOT REQUIRE ADJUSTMENT IN THE FIELD.

LOCAL DISTANCE TRIMMER ADJUSTMENT

Tune in a weak TV station and adjust the tuning control for best sound, if no weak station is available use an attenuator between the antenna receiver, adjust A24 for best picture.

AGC THRESHOLD CONTROL ADJUSTMENT

Turn the set on and tune in a local signal. Set the contrast control to the mid-position of its range. Adjust the AGC threshold control for a normal picture with the brightness control correctly set.

ALIGNMENT INSTRUCTIONS (CONT.)

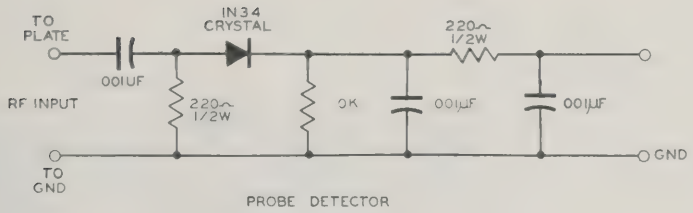


FIG. 1

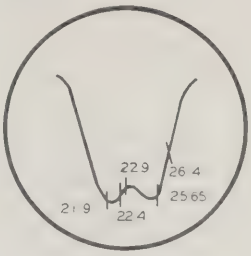


FIG. 2

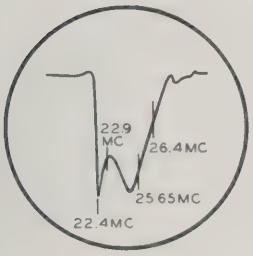


FIG. 3

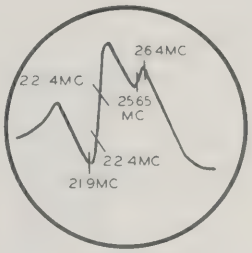


FIG. 4

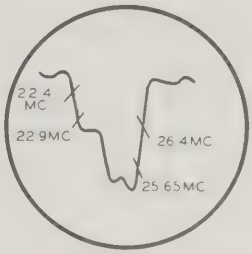


FIG. 5

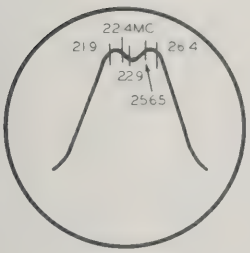


FIG. 6

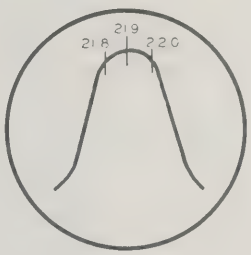


FIG. 7

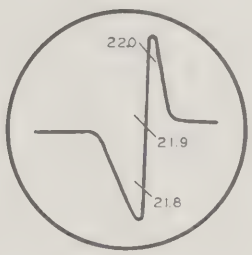


FIG. 8

DISASSEMBLY INSTRUCTIONS

1. Remove seven push-on type control knobs.
2. Unscrew set screw in tuning knob and remove tuning knob.
3. Remove eight screws holding rear cover, hinge cover upward.
4. Remove picture tube base socket and disconnect HV at breaker connection.
5. Disconnect deflection coil plug.
6. Remove both plugs from power unit.
7. Remove phono power and audio plugs from chassis.
8. Disconnect speaker at breaker plug.
9. Remove tuning indicator from snap type holder.
10. Remove four 7/16" hex head bolts holding TV chassis. Remove chassis from cabinet.
11. Remove four 7/16" hex head bolts holding power unit. Remove power unit from cabinet.
12. Remove four 11/32" hex nuts holding speaker and remove speaker.

NOTE: Picture tube may be left mounted in cabinet.

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	70VDC	70VDC	0V.	6.3VAC	0V.	0V.	1.2VDC		
V 2	6AK5	0V.	0V.	0V.	6.3VAC	125VDC	55VDC	0V.		
V 3	6AB4	190VDC	0V.	6.3VAC	0V.	0V.	0V.	0V.		
V 4	6AG5	-2VDC	0V.	6.3VAC	0V.	115VDC	115VDC	0V.		
V 5	6AG5	-.4VDC	.6VDC	6.3VAC	0V.	145VDC	145VDC	.6VDC		
V 6	6AG5	0V.	1.2VDC	6.3VAC	0V.	115VDC	115VDC	1.2VDC		
V 7	6AL5	0V.	0V.	0V.	6.3VAC	0V.	0V.	-2.7VDC		
V 8	6BA6	-.4VDC	0V.	6.3VAC	0V.	215VDC	70VDC	.6VDC		
V 9	12AU7	200VDC	.2VDC	7VDC	6.3VAC	6.3VAC	2.3VDC	2.3VDC	2.8VDC	0V.
V 10	6AG7	0V.	0V.	0V.	0V.	2.2VDC	135VDC	6.3VAC	205VDC	
V 11	6AU6	-.2VDC	0V.	6.3VAC	0V.	230VDC	140VDC	.8VDC		
V 12	6AU6	-.2VDC	0V.	6.3VAC	0V.	230VDC	140VDC	.8VDC		
V 13	6AU6	-.4VDC	0V.	6.3VAC	0V.	195VDC	41VDC	.1VDC		
V 14	6AL5	-.7VDC	-.5VDC	6.3VAC	0V.	0V.	0V.	-11VDC		
V 15	6AL7GT	1 VDC	6.3VAC	245VDC	0V.	0V.	0V.	0V.	1 VDC	
V 16	6AT6	-.5VDC	0V.	0V.	6.3VAC	0V.	0V.	130VDC		
V 17	6V6GT	0V.	6.3VAC	205VDC	215VDC	0V.	0V.	0V.	11 VDC	
V 18	6AU8	0V.	0V.	0V.	6.3 VAC	250VDC	250VDC	0V.		
V 19	6AL5	65VDC 105VDC	0V.	6.3VAC	0V.	41VDC 80VDC	0V.	41VDC 80VDC		
V 20	6AG5	-.4VDC	0V.	0V.	6.3VAC	20VDC	30VDC	0V.		
V 21	6SN7GT	-40VDC -60VDC	55VDC 190VDC	0V.	.4VDC	50VDC	0V.	0V.	6.3VAC	
V 22	6SN7GT	-1 VDC	300VDC	19VDC 3VDC	-1VDC	300VDC	19VDC 3VDC	6.3VAC	0V.	
V 23	6AL5	-.5VDC	-2VDC	6.3VAC	0V.	-1.3VDC	0V.	-2.4VDC		
V 24	6AC7	0V.	6.3VAC	0V.	-1.2VDC	0V.	70VDC	0V.	150VDC	
V 25	6K6GT	0V.	0V.	170VDC	175VDC	-32VDC	-2.2VDC	6.3VAC	.4VDC	
V 26	12AU7	#170VDC	#-13VDC	#15VDC	#6.6VAC	#5.3VAC	-48VDC	-48VDC	-53VDC	#0V.
V 27	6BG6G	#0V.	#6.6VAC	#7VDC #12VDC	#190VDC	#-18VDC	#370VDC	#0V.	90VDC	TOP CAP *
V 28	6AS7G	260VDC 330VDC	380VDC	400VDC	260VDC 330VDC	380VDC	400VDC	400VDC	400VDC	
V 29	5V4G	0V.	540VDC	-35VDC	400VDC	520VDC	400VDC	540VDC	540VDC	
V 30	1B3GT	* DO NOT MEASURE.								
V31	1B3GT	* DO NOT MEASURE.								
V32	6X4	-195VDC	0V.	6.3VAC	0V.	0V.	-195VDC	190VAC		
V33	6X4	-195VDC	0V.	6.3VAC	0V.	0V.	-195VDC	190VAC		
V34	5U4G	Inf.	440VDC	Inf.	460VAC	Inf.	460VAC	Inf.	440VDC	
V35	5U4G	Inf.	440VDC	Inf.	460VAC	Inf.	460VAC	Inf.	440VDC	
V36	19AP4	0V.	1.2VDC	PIN 10 140VDC 360VDC	PIN 11 75VDC	PIN 12 6.3VAC				

* DO NOT MEASURE.
# MEASURED FROM PIN 6 OF V33.

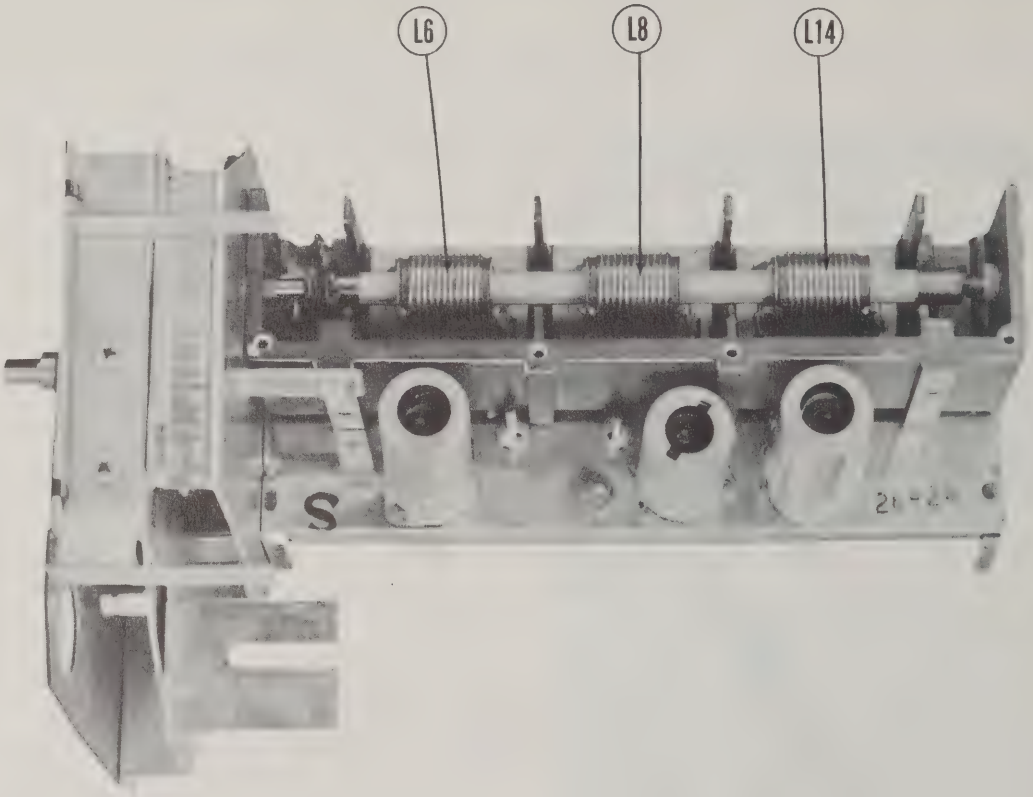
RESISTANCE READINGS (SEE NOTE #1)

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	†16KΩ	†16KΩ	0Ω	.1Ω	0Ω	0Ω	100Ω		
V 2	6AK5	5 Meg.	0Ω	0Ω	.1Ω	†50KΩ	†156KΩ	0Ω		
V 3	6AB4	†16KΩ	Inf.	.1Ω	0Ω	Inf.	12KΩ	0Ω		
V 4	6AG5	3 Meg.	0Ω	.1Ω	0Ω	†13KΩ	†13KΩ	0Ω		
V 5	6AG5	3 Meg.	68Ω	.1Ω	0Ω	†12KΩ	†12KΩ	68Ω		
V 6	6AG5	.1Ω	100Ω	.1Ω	0Ω	†13KΩ	†13KΩ	100Ω		
V 7	6AL5	.1Ω	Inf.	0Ω	.1Ω	0Ω	Inf.	5100Ω		
V 8	6BA6	5100Ω	0Ω	.1Ω	0Ω	†5KΩ	†75KΩ	68Ω		
V 9	12AU7	†7KΩ	470KΩ	1000Ω	.1Ω	.1Ω	56Ω	56Ω	1 Meg.	0Ω
V 10	6AG7	0Ω	0Ω	Inf.	470KΩ	56Ω	†16KΩ	.1Ω	†3.8KΩ	
V 11	6AU6	1.7 Meg.	0Ω	.1Ω	0Ω	†2KΩ	†35KΩ	82Ω		
V 12	6AU6	1.7 Meg.	0Ω	.1Ω	0Ω	†1.7KΩ	†36KΩ	82Ω		
V 13	6AU6	270KΩ	0Ω	.1Ω	0Ω	†9KΩ	†12.5KΩ	82Ω		
V 14	6AL5	200KΩ	100KΩ	.1Ω	0Ω	0Ω	0Ω	100KΩ		
V 15	6AL7GT	3.3KΩ	.1Ω	†1.4KΩ	1.5 Meg.	0Ω	0Ω	0Ω	3.3KΩ	
V 16	6AT6	1.3 Meg.	0Ω	0Ω	.1Ω	Inf.	Inf.	†110KΩ		
V 17	6V6GT	0Ω	.1Ω	†1.7KΩ	†1.4KΩ	440KΩ	220KΩ	0Ω	270Ω	
V 18	6AU8	0Ω	0Ω	0Ω	.1Ω	†1.8KΩ	†40KΩ	100Ω		
V 19	6AL5	54KΩ 42KΩ	470KΩ	.1Ω	0Ω	36KΩ 24KΩ	0Ω	36KΩ 24KΩ		
V 20	6AG5	1.5 Meg.	0Ω	0Ω	.1Ω	†48KΩ	†18KΩ	0Ω		
V 21	6SN7GT	830KΩ 330KΩ	†5 Meg. †850KΩ	0Ω	1.2 Meg.	†34KΩ	0Ω	0Ω	.1Ω	
V 22	6SN7GT	2.2 Meg.	†6KΩ	220Ω 2.2KΩ	2.2 Meg.	†6KΩ	220Ω 2.2KΩ	.1Ω	0Ω	
V 23	6AL5	1 Meg.	520KΩ	.1Ω	0Ω	48KΩ	Inf.	500KΩ		
V 24	6AC7	0Ω	.1Ω	0Ω	1.4 Meg.	10Ω	†21KΩ	0Ω	†24KΩ	
V 25	6K6GT	0Ω	0Ω	†6KΩ	†11KΩ	47KΩ	520KΩ	.1Ω	0Ω	
V 26	12AU7	#480KΩ	#250KΩ	#11KΩ	#.5Ω	#4Ω	5.6KΩ	5.6KΩ	#18KΩ	#0Ω
V 27	6BG6G	Inf.	#.5Ω	#100Ω	7KΩ	#1Meg.	11KΩ	#0Ω	†22KΩ	TOP CAP †200Ω
V 28	6AS7G	†1.3 Meg. †1 Meg.	†440Ω	†85Ω	†1.3 Meg. †1 Meg.	†440Ω	†85Ω	†85Ω	†87Ω	
V 29	5V4G	Inf.	Inf.	Inf.	†90Ω	Inf.	†90Ω	Inf.	Inf.	
V 30	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP Inf.
V31	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP †200Ω
V32	6X4	1.2 Meg.	Inf.	.1Ω	0Ω	Inf.	1.2 Meg.	2.5Ω		
V33	6X4	1.2 Meg.	Inf.	.1Ω	0Ω	Inf.	1.2 Meg.	2.5Ω		
V34	5U4G	Inf.	6KΩ	Inf.	5Ω	Inf.	6.5Ω	Inf.	6KΩ	
V35	5U4G	Inf.	6KΩ	Inf.	5Ω	Inf.	6.5Ω	Inf.	6KΩ	
V36	19AP4	0Ω	1.3 Meg.	PIN 10 †300KΩ †90KΩ	PIN 11 75KΩ	PIN 12 .1Ω				

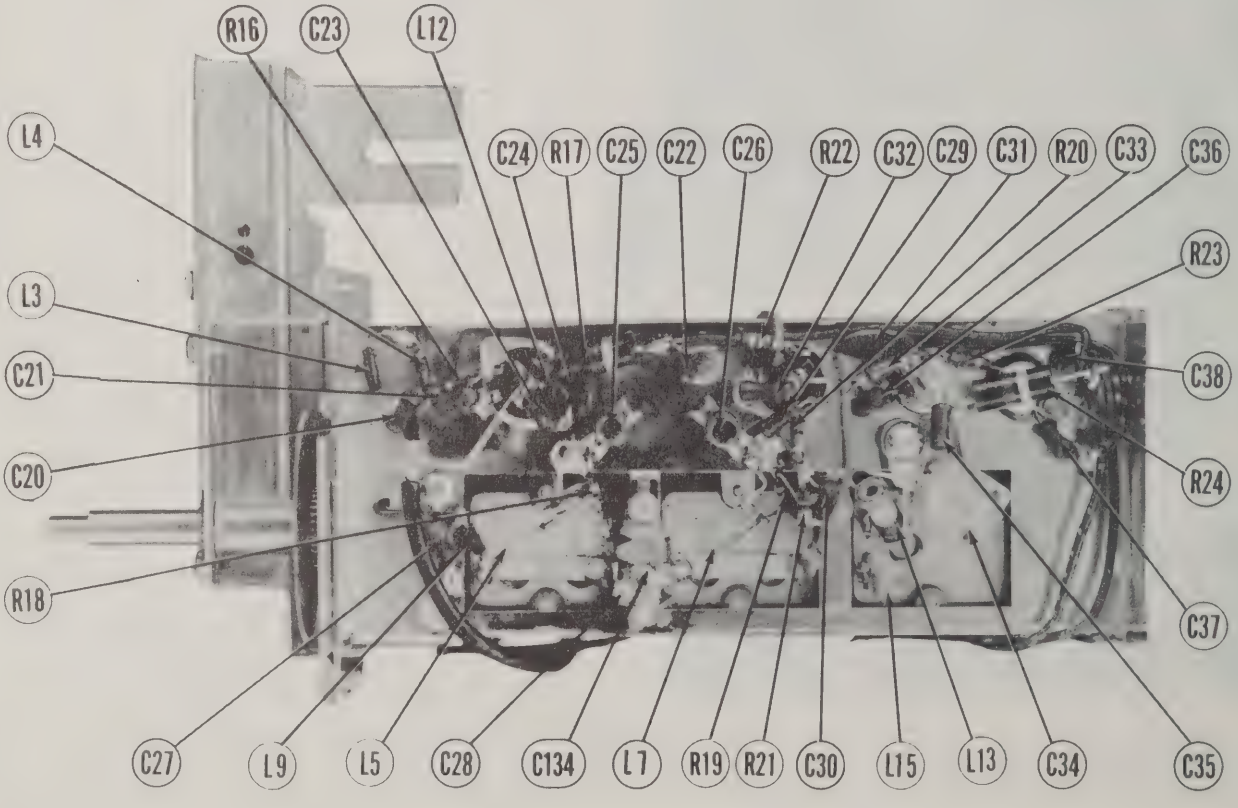
† MEASURED FROM PIN 2 OF V35.
# MEASURED FROM PIN 6 OF V33.
† MEASURED FROM PIN 8 OF V28.

NOTE #1 : MEASURED WITH RELAY M8 CLOSED AND FUNCTION SELECTOR SWITCH IN THE "TV - DIAL LITE OFF" POSITION.

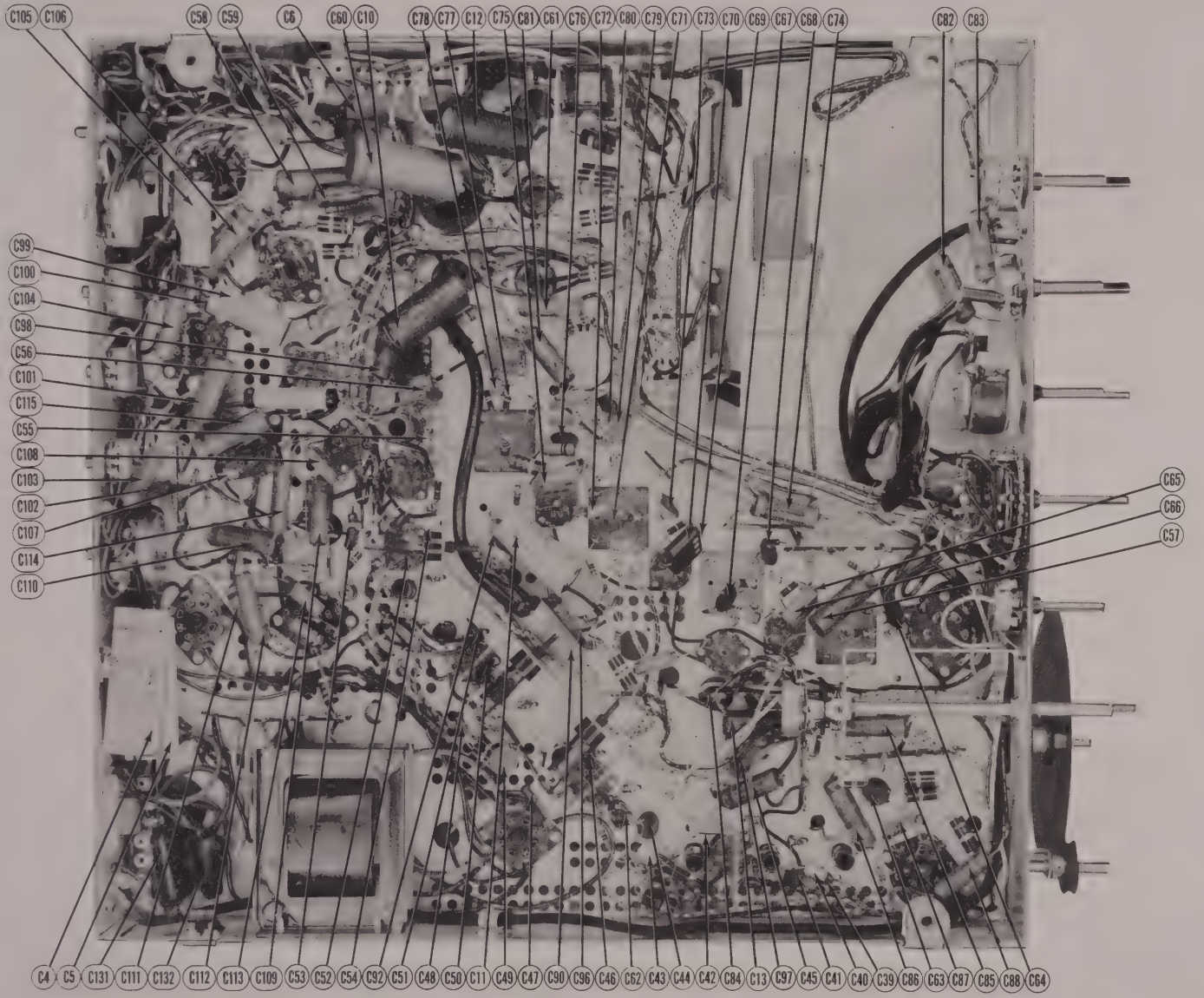
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



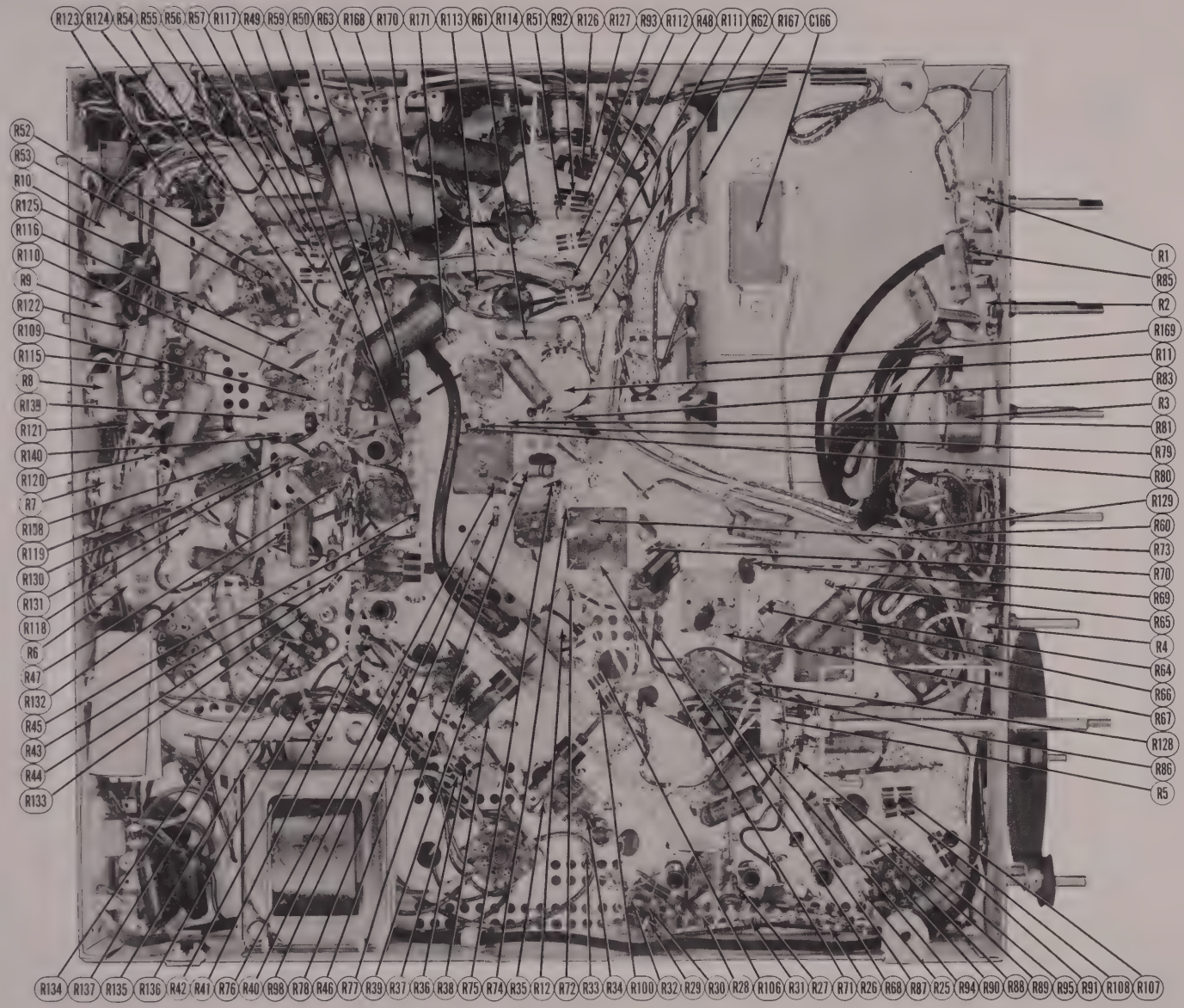
INDUCTUNER-TOP VIEW



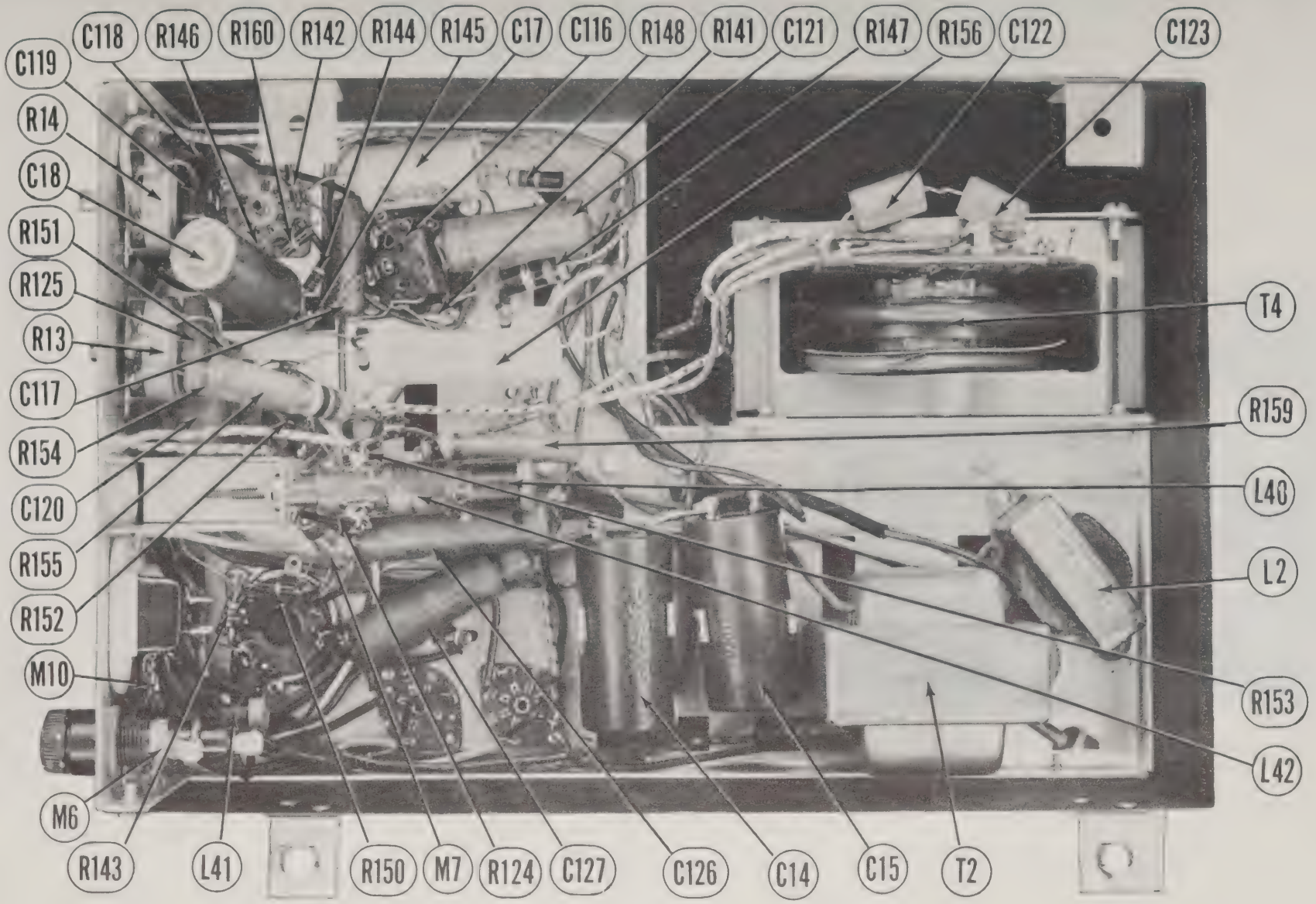
INDUCTUNER-BOTTOM VIEW



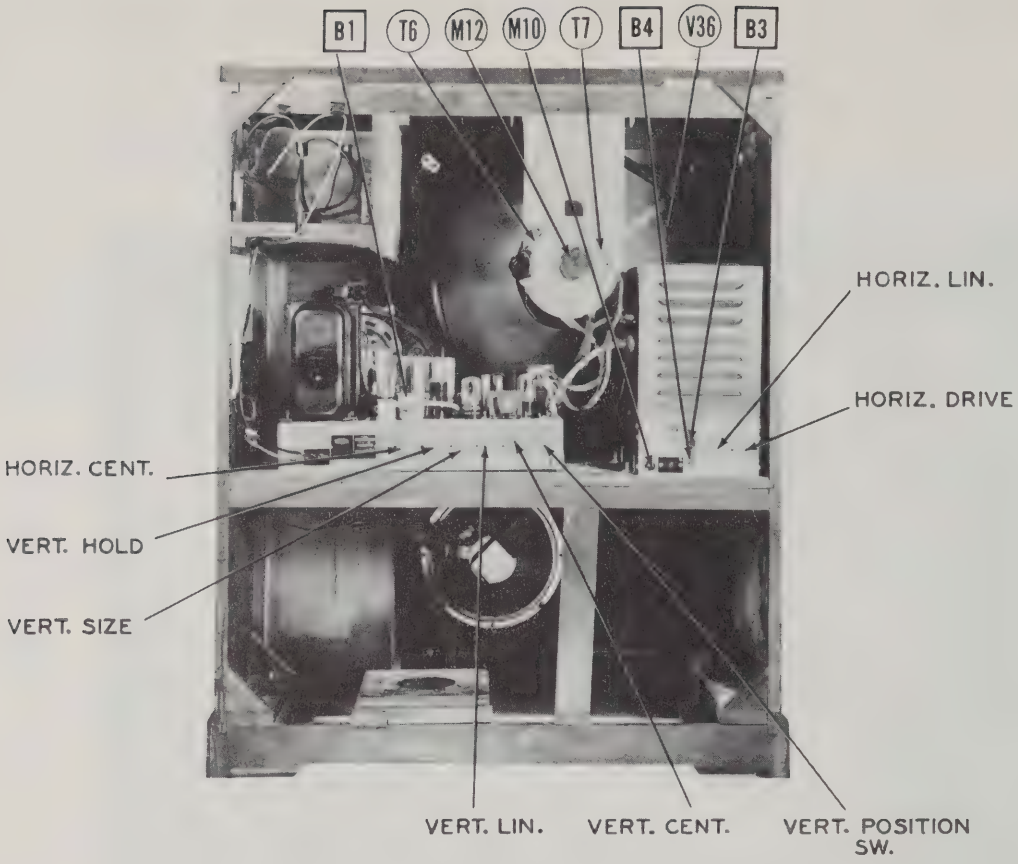
CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



HIGH VOLTAGE COMPARTMENT - BOTTOM VIEW



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

HORIZONTAL FREQUENCY ADJUSTMENTS

Rotate the horizontal frequency adjustment (B1) until the picture falls out of "sync." Adjust the control to bring the picture back into sync and note the position where this occurs. Repeat the above procedure but in the opposite direction. The correct setting is mid-way between the two points where picture falls into synchronization.

HORIZONTAL PHASING ADJUSTMENT

Reduce the picture width until both edges are visable. Turn up the brightness control and reduce the contrast control so the normally blanked out edges of the picture are visable. Adjust the phasing adjustment (B2) until the normally blanked edges of the raster are of equal width.

HORIZONTAL SIZE AND LINEARITY ADJUSTMENTS

There are two size adjustments, a coarse adjustment which is a switch on the side of the fly-back power supply case, and a fine adjustment (B3). Set these two adjustments until picture fills the mask horizontally.

Adjust the horizontal drive control and horizontal linearity adjustment (B4) until the picture is linear in the horizontal plane.

PICTURE TUBE SENSITIVITY CONTROL ADJUSTMENT

If the picture tube is replaced, the picture tube sensitivity control (R11) should be adjusted as follows:

Turn the contrast control fully counter-clockwise.

Adjust the brightness control until a VTVM connected between the brightness control arm and chassis measures -45 volts. Adjust R11 until the raster on the screen just disappears.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		DUMONT PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	25000190	6J6	7BF	
V2	Mixer	25000180	6AK5	7BD	
V3	Oscillator	25001760	6AB4	5CE	
V4	1st Video IF	25000010	6AG5	7BD	
V5	2nd Video IF	25000010	6AG5	7BD	
V6	3rd Video IF	25000010	6AG5	7BD	
V7	Video Det.	25000020	6AL5	6BT	
V8	1st Video Amp.	25000240	6BA6	7BK	
V9	2nd Video Amp. - DC Restorer	25000130	12AU7	9A	
V10	Video Output	25000580	6AG7	8Y	
V11	1st Sound IF	25000050	6AU6	7BK	
V12	2nd Sound IF	25000050	6AU6	7BK	
V13	Limiter	25000050	6AU6	7BK	
V14	Disc.	25000020	6AL5	6BT	
V15	Tuning Indicator	25000200	6AL7GT	8CH	
V16	RF Amp.	25000040	6AT6	7BT	
V17	Audio Output	25000090	6V6GT	7AC	
V18	Sync. Amp.	25000050	6AU6	7BK	
V19	Sync. Clamper-AGC Rectifier	25000020	6AL5	6BT	
V20	Sync. Clipper	25000010	6AG5	7BD	
V21	Vert. Buffer-Vert. Osc.-Vert. Disch.	25000110	6SN7GT	8BD	
V22	Vert. Amp.	25000110	6SN7GT	8BD	
V23	Hor. Phase Det.	25000020	6AL5	6BT	
V24	Hor. AFC	25000120	6AC7	8N	
V25	Hor. Osc.	25000100	6K6GT	7S	
V26	Hor. Disch. -Time Delay Rectifier	25000130	12AU7	9A	
V27	Hor. Output	25000140	6BG6G	5BT	
V28	Damper	25000290	6AS7G	8BD	Used in model RA-108A only.
V29	Damper	25000160	5V4G	5L	
V30	HV Rectifier	25000150	1B3GT	3C	
V31	HV Rectifier	25000150	1B3GT	3C	
V32	Bias Rectifier	25000170	6X4	5BS	
V33	Bias Rectifier	25000170	6X4	5BS	
V34	LV Rectifier	25000060	5U4G	5T	
V35	LV Rectifier	25000060	5U4G	5T	
V36A	Picture Tube	25000870	19AP4	12D	
B	Picture Tube	25001560	15DP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	DUMONT PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	
C1	80	350	03016620	E4A30			TVL-5	Filter
C2	80	350	03015320	E4A28A			TVL-5	Filter
C3A	40	475	03016170	AF8X815B			TVL-32	▬ Filter
B	40	400						■ Filter
C	25	50						▲ Vert. Output Cathode Bypass
C4	2000	6	03016910	PRS6/2000			TVA-2	Hor. Cent. Cont. Bypass
C5	2000	6	03016910	PRS6/2000			TVA-2	Hor. Cent. Cont. Bypass
C6	1.5Ω @ 60∿	4	03012250	PRS6/1000			TVA-2	Vert. Cent. Cont. Bypass
C7A	10	450	03015580	AF2222J			TVL-36	▬ Decoupling
B	10	450						■ 2nd V. Amp. Plate Byp.
C	10	450						▲ Output Decoupling
D	10	150						Sync. Clipper Plate Dec.
C8A	10	450	03015580	AF2222J			TVL-36	▬ 3rd V. Amp. Screen Byp.
B	10	450						■ 1st V. Amp. Plate Dec.
C	10	450						▲ 1st V. Amp. Screen Byp.
D	10	150						Sync. Clipper Screen Byp.
C9A	30	450	03015590	AF6J205A			TVL-26	▬ Decoupling
B	100	25						■ 3rd V. Amp. Cath. Byp.
C	25	25						▲ Output Cathode Byp.
C10	8	450	03001160	PRS450/8			TVA-21	Vert. Buffer Plate Dec.
C11	8	450	03001160	PRS450/8			TVA-21	Decoupling
C12	8	450	03001160	PRS450/8			TVA-21	Filter
C13	4	150	03013670	PRS150/4			UT-41	Bias Filter
C14	50	250	03016920	AF12F			TVL-3	Bias Filter
C15	50	250	03016920	AF12F			TVL-3	Bias Filter
C16	50	250	03016920	AF12F			TVL-3	Bias Filter †
C17	4	250	03017040	PRS250/4			UT-42	Hor. Disch. Cath. Dec.
C18	25	50	03000040	PRS50/25			TVA-15	Hor. Output Cath. Bypass
C19	1.5 MFD @ 60∿	950	*					Power Transformer Sec. Shunt
C20	30		03013070	SI30JNPO	D2-30	NPOL-33		RF Coupling
C21	100		03016700	GP100M	D6-101	GP1K-100		RF Cathode Bypass
C22	470		03016480	GP470M	D6-470	GP2K-470		RF Bypass
C23	470		03016480	GP470M	D6 470	GP2K-470		RF Filament Bypass
C24	100		03016700	GP100M	D6-101	GP2K-470		RF Coupling
C25	.5-5		03016650			532-08-.5-5		Variable Trimmer
C26	.5-5		03016650			532-08-.5-5		Variable Trimmer
C27	100		03016700	GP100M	D6-101	GP1K-100		Fixed Trimmer
C28	15		03014580	CI15JNPO	D2-15	GP1K-15		Fixed Trimmer
C29	100		03016700	GP100M	D6-101	GP1K-100		RF Coupling
C30	470		03016480	GP470M	D6-471	GP2K-470		AGC Filter
C31	5000		03016760	BPD-5	D6-502	811-005	29C1	Mixer Screen Bypass
C32	470		03016480	GP470M	D6-471	GP2K-470		Mixer Filament Bypass
C33	1		03012150		D2-1			Osc. Coupling
C34	1.5-7		03016870			TS2A-N300-1.5 -7		Variable Trimmer
C35	5		03016860	SI5DN150		N150K-5		Osc. Grid Cap.
C36	470		03016480	GP470M	D6-471	GP2K-470		Osc. Filament Bypass
C37	470		03016480	GP470M	D6-471	GP2K-470		Filament Bypass
C38	470		03016480	GP470M	D6-471	GP2K-470		RF Bypass

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No	RATING CAP	RATING VOLT	REPLACEMENT DATA: DUMONT PART No	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C39	5000		[illegible]	BPD-5	D6-502	811-005	29C1	Mixer Plate Decoupling
C40	100		03014380	GP100M	D6-101	GP1K-100	1FM-31	IF Coupling
C41	5000		03015610	BPD-5	D6-502	811-005	29C1	AGC Filter
C42	5000		03015610	BPD-5	D6-502	811-005	29C1	1st V. IF Decoupling
C43	100		03014380	GP100M	D6-101	GP1K-100	1FM-31	IF Coupling
C44	5000		03015610	BPD-5	D6-502	811-005	29C1	AGC Filter
C45	.05	200	03000950	P288-05			TM-15	AGC Filter
C46	5000		03015610	BPD-5	D6 502	811-005	29C1	2nd V. IF Decoupling
C47	20		03013800	S120JNPO	D2 20	NPOK-20	MS-42	Fixed Trimmer
C48	10		03015270	S10JNPO	D2-10	NPOK-10	MS-41	Fixed Trimmer
C49	5000		03015610	BPD-5	D6-502	811-005	29C1	IF Coupling
C50	5000		03015610	BPD-5	D6-502	811-005	29C1	3rd V. IF Cath. Bypass
C51	5000		03015610	BPD-5	D6-502	811-005	29C1	3rd V. IF Decoupling
C52	2.5		03002720					IF Coupling
C53	20		03013800	S120JNPO	D2-20	NPOK-20	MS-42	Fixed Trimmer
C54	10		03013080	GP10K	D2-10	NPOK-10	MS-41	V. Diode Filter
C55	47		03012730	CN47KNPO	D2-47	NPOM-50	MS-45	Fixed Trimmer
C56	.1	400	03014040	P488-1			TM-1	Video Coupling
C57	.1	200	03013990	P288-1			TM-1	Video Coupling
C58	.1	600	03013380	P688-1			TM-1	Video Coupling
C59	.05	200	03000950	P288-05			TM-15	Video Coupling
C60	.5	400	03014260	484-5			TC-5	Pic. Tube Cath. Dec.
C61	.01	600	03012560	P688-01	D6-103		TM-11	Acc. Anode Bypass
C62	5		03014610	GP5K	D2-4.7	NPOK-5	MS-55	S. IF Coupling
C63	5000		03015610	BPD-5	D6-502	811-005	29C1	AGC Filter
C64	5000		03015610	BPD-5	D6-502	811-005	29C1	AVC Filter
C65	2.5		03002720					Fixed Trimmer
C66	4700	500	03033060	1467-005	D6 472	811-005	1FM-25	1st S. IF Screen Bypass
C67	5000		03015610	BPD-5	D6-502	811-005	29C1	1st S. IF Decoupling
C68	5000		03015610	BPD-5	D6-502	811-005	29C1	AVC Filter
C69	2.5		03002720					Fixed Trimmer
C70	4700	500	03033060	1467-005	D6-472	811-005	1FM-25	2nd S. IF Screen Bypass
C71	5000		03015610	BPD-5	D6-502	811-005	29C1	2nd S. IF Decoupling
C72	10		03013080	GP10K	D6-100	GP1K-10	MS-41	S. IF Coupling
C73	5000		03015610	BPD-5	D6-502	811-005	29C1	AVC Filter
C74	.05	200	03000950	P288-05			TM-15	AVC Filter
C75	4700	500	03033060	1467-005	D6 472	811-005	1FM-25	Limiter Screen Bypass
C76	5000		03015610	BPD-5	D6-502	811-005	29C1	Limiter Decoupling
C77	47		03012730	GP47K	D6-470	GP1K-47	1FM-45	RF Bypass
C78	47		03012730	GP47K	D6-470	GP1K-47	1FM-46	RF Bypass
C79	5000		03015610	BPD-5	D6-502	811-005	29C1	RF Bypass
C80	470		03014420	GP470K	D6-471	GP2K-470	1FM-35	De-emphasis
C81	.05	200	03000950	P288-05			TM-15	Tuning Ind. Filter
C82	.02	400	03001460	P488-02			TM-12	Audio Coupling
C83	.01	400	03001450	P488-01	D6-103	811-01	TM-11	Tone Compensation
C84	10000		03015920	BPD-10	D6-103	811-01	36C1	Audio Coupling
C85	.01	400	03001450	P488-01	D6-103	811-01	TM-11	Tone Compensation
C86	.05	400	03014020	P488-05			TM-15	Audio Coupling
C87	330	500	03020180	1468-00035	D6-331	GP2K-330	1FM-335	Output Grid Bypass
C88	.005	600	03001570	P688-005	D6-502	811-005	TM-25	Output Plate Bypass
C89	1000		03013940	GP1000M	D6-102	GP2L-001	1FM-21	Sync. Amp. Screen Bypass
C90	.1	400	03003400	P488-1			TM-1	Sync. Amp. Screen Dec.
C91	1000		03013940	GP1000M	D6-102	GP2L-001	1FM-21	Sync. Amp. Plate Dec.
C92	5000		03015610	BPD-5	D6-502	811-005	29C1	RF Bypass
C93	5000		03015610	BPD-5	D6-502	811-005	29C1	Filament Bypass
C94	47		03012730	GP47K	D6-470	GP1K-47	1FM-45	RF Bypass
C95	1000		03013940	GP1000M	D6-102	GP2L-001	1FM 21	RF Bypass
C96	.01	400	03001450	P488-01	D6-103	811-01	TM-11	AGC Filter
C97	.01	400	03001450	P488-01	D6-103	811-01	TM-11	AGC Filter
C98	.01	400	03001450	P488-01	D6-103	811-01	TM-11	Sync. Coupling
C99	.1	400	03003400	P488-1			TM-1	Sync. Coupling
C100	82	500	03013540		D2-82			Sync. Feedback
C101	.1	400	03003400	P488-1			TM-1	Sync. Coupling
C102	.005	600	03001570	P688-005	D6-502	811-005	TM-25	Integrator Net.
C103	.01	400	03001450	P488-01	D6 103	811-01	TM-11	Integrator Net.
C104	.02	400	03015940	P488-02			TM-12	Vert. Osc. Grid Cap.
C105	.1	400	03003400	P488-1			TM-1	Vert. Discharge
C106	.1	400	03014040	P488-1			TM-1	Vert. Sweep Coupling
C107	47		03012730	CN47KNPO	D6-470	GP1K-47	1FM-45	Hor. Sync. Coupling
C108	10000	300	03033090	1467-01	D6-103		1FM-11	Fixed Trimmer
C109	.005	600	03001570	P688-005	D6-502	811-005	TM-25	AFC Filter
C110	.1	200	03013990	P288-1			TM-1	AFC Filter
C111	.05	200	03000950	P288-05			TM-15	Hor. AFC Screen Bypass
C112	.005	600	03001570	P688-005	D6 502	811-005	TM-25	Hor. AFC Coupling
C113	10000	300	03033420	1467-01			1FM-11	Phase Shifter
C114	.005	600	03001570	P688-005	D6-502	811-005	TM-25	Hor. Osc. Grid Cap.
C115	.05	400	03014020	P488-05			TM-15	Hor. Osc. Screen Bypass
C116	330	500	03020180	1469-00035	D6-331	GP2K-330		Differentiator Net.
C117	.01	400	03001450	P488-01	D6-103	811-01	TM-11	Hor. Sweep Coupling
C118	.01	600	03012560	P688-01	D6-103	811-01	TM-11	Hor. Sweep Coupling
C119	1000	500	03029040	1467-001	D6-102	GP2L-001	1FM-21	Hor. Discharge §
C120	.1	600	03011380	P688-1			TM-1	Hor. Discharge Decoupling
C121	.05	600	03015370	P688 05			TM-15	Hor. Output Screen Bypass
C122	440	1500	♦					Fixed Trimmer †
C123	440	1500	♦					Fixed Trimmer †
C124	220	500	03020160	1468-00025	D6-221	GP2K-220	1FM-325	Hor. Sweep Coupling †
C125	10000	300	03033090	1467-01	D6-103	811-01	1FM-11	Damper Grid Filter †
C126	.035	1000	03014060	P1088-033				Damper Filter
C127	.05	1000	03014070	P1088-05			TR-15	Damper Filter
C128	500	10000	03014410	HV-500	TV1-501			Voltage Doubler Cap.
C129	500	10000	03014410	HV-500	TV1-501			HV Filter
C130	500	10000	03014410	HV-500	TV1-501			HV Filter
C131	47	5000	03015930					Fixed Trimmer †
C132	.05	600	03016500	P688-05			TM-15	Line Filter
C133	.05	600	03016500	P688-05			TM-15	Line Filter
C134	130		[illegible]					Fixed Trimmer

* Use with transformer of matching color dot. Yellow dot Part No. 03018060, Red dot 03018050, white dot 03018070.
† Used only in model RA-108A flyback power supply chassis.
† Used only in model RA-105B flyback power supply chassis.
§ Model RA-105B uses 2200MMF in this application. MFGR'S Part No. 03029080.
♦ Some models use 220MMF 2000V in place of items C122 and C123. MFGR'S Part No. 03016940.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: DUMONT PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1	200KΩ	½	01007310		01007310		Tone control and switch
R2	1 Meg.	½	01007300	Q18-137X	T-103		Volume control, tapped@ 100KΩ
R3	1000Ω	25	01007330	PR-25-1000	PW-25-1000		Focus control-Wire Wound
R4	100KΩ	½	01008230	QII-128	M-49-S	B-40	Brightness control
R5A	Switch		01025201				Local-Distance switch
B	1000Ω	½					Contrast control
R6	25Ω	4	01007800		10-25		Horiz. centering control-Wire Wound
R7A	500KΩ	½	01007930	QII-133	M-58-S	AN-59	Vert. hold control
B	Shaft		Not Req.	Not Req.	Not Req.	AK-1	Attach to R7A per instructions
R8A	4 Meg.	½	01008570	QII-141	M-85-S	AN-86	Vert. size control
B	Shaft		Not Req.	Not Req.	Not Req.	AK-1	Attach to R8A per instructions
R9	2000Ω	2	01007640	W-2000	43-2000	V-131	Vert. linearity control
R10	25Ω	2	01016910	W-25	43 25	V-111	Vert. centering control-Wire Wound
R11A	500KΩ	½	01007400	QII-133	AM-58-S	AN-59	Sensitivity control
B	Shaft		Not Req.	RQ	KSS 3 *	AK-1	Attach to R11A per instructions
R12A	25KΩ	½	01014020	QII-120	AM-40-S	AN-26	AGC control
B	Shaft		Not Req.	RQ	KSS-3 *	AK-1	Attach to R12A per instructions
R13	250KΩ	2	01007630				Horiz. linearity control-See Note 1
R14	50KΩ	2	01008510				Horiz. drive control

* File slot in shaft to duplicate original.
Note 1. Not used in model RA-105B.

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: DUMONT PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ARE ± 10% UNLESS OTHERWISE STATED.
R15	200Ω 5%	1	02030310		Ant. Coil Shunt-See Note 2
R16	100Ω 5%	1	02030240		RF Cathode
R17	10KΩ	1	02037890		RF Plate
R18	10KΩ	½	02031890		RF Plate Coil Shunt
R19	8200Ω	½	02031880		Mixer Grid Coil Shunt
R20	1 Meg.	½	02032130		Mixer Grid
R21	100KΩ	½	02032040		AGC Network
R22	150KΩ	½	02032030		Mixer Screen
R23	12KΩ	2	02031900		Osc. Grid
R24	10KΩ	2	02037890		Osc. Plate
R25	8200Ω 5%	½	02030700	BTS-8200-5%	1st Video IF Coil Shunt
R26	47KΩ	½	02031970	BTS 47K	Mixer Plate Decoupling
R27	5600Ω 5%	½	02030660	BTS-5600	1st Video IF Grid
R28	68KΩ 5%	½	02030920	BTS-68K-5%	2nd Video IF Coil Shunt
R29	22KΩ	2	02037930		1st Video IF Decoupling
R30	22KΩ	2	02037930		1st Video IF Decoupling
R31	10KΩ 20%	½	02031890	BTS 10K	AGC Network
R32	10KΩ	½	02031890	BTS-10K	AGC Network
R33	3000Ω 5%	½	02030590		2nd Video IF Grid
R34	68Ω	½	02031630		2nd Video IF Cathode
R35	750Ω 5%	½	02030690		3rd Video IF Coil Shunt
R36	22KΩ	2	02037930		2nd Video IF Decoupling
R37	22KΩ	2	02037930		2nd Video IF Decoupling
R38	15KΩ 5%	½	02030760	BTS-15K-5%	3rd Video IF Coil Shunt
R39	100Ω	½	02031650		4th Video IF Cathode
R40	10KΩ 5%	½	02030720	BTS-10K-5%	4th Video IF Coil Shunt
R41	22KΩ	2	02037930		4th Video IF Decoupling
R42	22KΩ	2	02037930		4th Video IF Decoupling
R43	5100Ω 5%	½	02030650		Video Det. Diode Load
R44	100KΩ	½	02032010	BTS 100K	Series AGC Test Point
R45	68Ω	½	02031630		1st Video Amp. Cathode
R46	75KΩ 5%	½	02033930		1st Video Amp. Screen
R47	3000Ω 5%	½	02030590		1st Video Amp. Plate
R48	100Ω	½	02031770	BTS-1000	1st Video Amp. Plate Decoupling
R49	20KΩ 5%	½	02030730		Sound Trap Coil Shunt
R50	470KΩ	½	02032090	BTS-470K	2nd Video Amp. Grid
R51	5600Ω	1	02034860	BTA-5600	2nd Video Amp. Plate
R52	470KΩ	½	02032090	BTS-470K	Video Output Grid
R53	56Ω	1	02034620	BW-1-56	Video Output Cathode
R54	15KΩ	1	02034910	BTA-15K	Video Output Screen
R55	4700Ω	2	02037850	BT 2-4700	Video Output Plate
R56	4700Ω	2	02037850	BT-2-4700	Video Output Plate
R57	10KΩ	½	02031890	BTS-10K	Isolation
R58	270KΩ	½	02032060	BTS 270K	Picture Tube Grid
R59	1 Meg.	½	02032130	BTS-1 Meg.	DC Rest. Load
R60	220KΩ	½	02032050	BTS-220K	Voltage Divider
R61	390KΩ	½	02032090	BTS-390K	Voltage Divider
R62	100KΩ	½	02032010	BTS-100K	Voltage Divider
R63	470Ω	1	02034730	BTA-470	Decoupling
R64	22KΩ	½	02031930	BTS-22K	1st Sound IF Transformer Shunt
R65	100KΩ	½	02032010	BTS-100K	1st Sound IF Grid
R66	82Ω	½	02031640		1st Sound IF Cathode
R67	33KΩ	½	02034950	BTA-33K	1st Sound IF Screen
R68	1000Ω	½	02031770	BTS 1000	1st Sound IF Decoupling
R69	100KΩ	½	02032010		2nd Sound IF Grid
R70	82Ω	½	02031640		2nd Sound IF Cathode
R71	33KΩ	1	02034950	BTA 33K	2nd Sound IF Screen
R72	1000Ω	½	02031770	BTS-1000	2nd Sound IF Decoupling
R73	1.2 Meg.	½	02032140	BTS-1.2 Meg.	AVC Network
R74	270KΩ	½	02032060	BTS-270K	Limiter Grid
R75	82Ω	½	02031640		Limiter Cathode
R76	33KΩ	2	02037950		Limiter Screen
R77	8200Ω	1	02034880	BTA-8200	Limiter Decoupling
R78	10KΩ	½	02031890	BTS-10K	Voltage Divider
R79	100KΩ	½	02032010	BTS-100K	Disc. Diode Load
R80	100KΩ	½	02032010	BTS-100K	Disc. Diode Load
R81	100KΩ	½	02032010	BTS-100K	De-emphasis
R82	2.2Ω	1	02072040	BW-1-2.2	Series Dial Lamp
R83	1.2 Meg.	½	02032140	BTS-1.2 Meg.	Tuning Ind. Network
R84	3300Ω	½		BTS-3300	Tuning Ind. Grid
R85	22KΩ	½		BTS 22K	Tone Compensation
R86	680KΩ	½	02032110	BTS-680K	Volume Control Shunt
R87	1.2 Meg.	½	02032140	BTS-1.2 Meg.	AF Amp. Grid
R88	100KΩ	½	02032010	BTS-100K	AF Amp. Plate
R89	220KΩ	½	02032050	BTS-220K	Output Grid
R90	220KΩ	½	02032050	BTS-220K	Output Grid
R91	270Ω	2	02037700	BW-2-270	Output Cathode
R92	1200Ω	2	02037780	BT-2-1200	Output Decoupling
R93	1200Ω	2	02037780	BT-2-1200	Output Decoupling
R94	1.2 Meg.	½	02032140	BTS-1.2 Meg.	AGC Network

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: DUMONT PART No.	IRC PART No.	IDENTIFICATION CODES
R95	1.2 Meg.	½	02032140	BTS-1.2 Meg.	AGC Network
R96	100Ω	½	02031650	BW-½-100	Sync. Amp. Cathode
R97	1000Ω	½	02031770	BTS-1000	Sync. Amp. Screen
R98	39KΩ	1	02034960	BTA-39K	Sync. Amp. Screen Decoupling
R99	1000Ω	½	02031770	BTS-1000	Sync. Amp. Plate Decoupling
R100	100KΩ	2	02038010	BT-2-100K	Voltage Divider
R101	1000Ω	½	02031770	BTS 1000	Sync. Clamper Load
R102	1.2 Meg.	½	02032140	BTS-1.2 Meg.	AGC Network
R103	470KΩ	½	02032090	BTS-470K	AGC Rect. Diode Load
R104	18KΩ	½	02031920	BTS-18K	Sync. Clamper Load
R105	22KΩ	½	02031930	BTS-22K	Sync. Coupling
R106	27KΩ	½	02031940	BTS-27K	Voltage Divider
R107	8200Ω	2	02037880	BT-2-8200	Voltage Dropping
R108	8200Ω	2	02037880	BT-2-8200	Voltage Dropping
R109	1.5 Meg.	½	02032150	BTS-1.5 Meg.	Sync. Clipper Grid
R110	22KΩ	½	02031930	BTS-22K	Sync. Clipper Plate
R111	100KΩ	2	02038010	BT-2-100K	Sync. Clipper Plate Decoupling
R112	100KΩ	2	02038010	BT-2-100K	Sync. Clipper Screen
R113	15KΩ 5%	½	02030760	BTS-15K-5%	Voltage Divider
R114	27KΩ	½	02031940	BTS-27K	Voltage Divider
R115	1.2 Meg.	½	02032140	BTS-1.2 Meg.	Vert. Buffer Grid
R116	5600Ω	1	02034860	BTA-5600	Vert. Buffer Plate
R117	27KΩ	2	02037940	BT-2-27K	Vert. Buffer Plate Decoupling
R118	10KΩ	½	02031890	BTS-10K	Integrator Network
R119	10KΩ	½	02031890	BTS-10K	Integrator Network
R120	10KΩ	½	02031890	BTS 10K	Integrator Network
R121	330KΩ	½	02032070	BTS-330K	Vert. Osc. Grid
R122	820KΩ	½	02032120	BTS-820K	Vert. Osc. Plate
R123	4300Ω 5%	½	02030630		Vert. Peaking
R124	2.2 Meg.	½	02032170	BTS-2.2 Meg.	Vert. Amp. Grid
R125	220Ω	1	02034690	BW-1-220	Vert. Amp. Cathode
R126	10KΩ	2	02037890	BT-2-10K	Decoupling
R127	10KΩ	2	02037890	BT-2-10K	Decoupling
R128	47KΩ	½	02031970	BTS-47K	Bias Network
R129	1200Ω 5%	½	02030500	BTS-1200-5%	Bias Network
R130	470KΩ	½	02032090	BTS-470K	Horiz. Sync. Disc. Load
R131	470KΩ	½	02032090	BTS-470K	Horiz. Sync. Disc. Load
R132	470KΩ	½	02032090	BTS-470K	Horiz. AFC Filter Network
R133	470Ω	½	02021730	BTS-470	Horiz. AFC Grid
R134	10Ω	½	02031530		Horiz. AFC Cathode
R135	22KΩ	2	02037930	BT-2-22K	Horiz. AFC Plate
R136	47KΩ	2	02037970	BT-2-47K	Horiz. AFC Screen
R137	27KΩ	1	02034940	BTA-27K	Voltage Divider
R138	47KΩ	½	02031970	BTS-47K	Horiz. Osc. Grid
R139	5000Ω	10	02107960	AB-5000	Horiz. Osc. Plate-Wire Wound
R140	10KΩ	2	02037890	BT-2-10K	Horiz. Osc. Screen
R141	6800Ω	½	02031870	BTS-6800	Differentiator
R142	220KΩ	½	02032050	BTS-220K	Horiz. Discharge Grid
R143	470KΩ	½	02032090	BTS-470K	Horiz. Discharge Plate-See Note 3
R144	10KΩ	½	02031890	BTS-10K	Bias Network See Note 4
R145	470Ω	½	02031730		Parasitic Supp.
R146	1 Meg.	½	02032130	BTS-1 Meg.	Horiz. Output Grid
R147	47Ω	2	02037610	BW-2-47	Horiz. Output Cathode
R148	47Ω	½	02101050		Parasitic Supp.-Wire Wound
R149	20KΩ	10	02108160	AB 20,000	Horiz. Output Screen-Wire Wound-See Note 5
R150	10KΩ	½	02031890	BTS-10K	Horiz. Discharge Decoupling-See Note 4
R151	1 Meg.	½	02032130	BTS-1 Meg.	Voltage Divider-See Note 4
R152	100Ω	½	02101130		Parasitic Supp.-Wire Wound-See Note 4
R153	10KΩ	½	02031890	BTS-10K	Damper Grid-See Note 4
R154	120KΩ 5%	2	02038020	BT-2-120K-5%	Damper Grid-See Note 4
R155	120KΩ 5%	2	02038020	BT-2-120K-5%	Damper Grid-See Note 4
R156	350Ω	20	02106540	DG-350	Damper Plate-Wire Wound-See Note 4
R157	2 Meg. 20%	5	02019500		HV Rect. Load-Wire Wound
R158	100KΩ	1	02035010		HV Filter
R159	18KΩ 5%	2	02036780	BT-2-18K-5%	Time Delay Rect. Cathode
R160	10Ω	½	02031530	BW-½-10	Time Delay Rect. Filament
R161	2200Ω	½	02031810	BTS-2200	Horiz. Peaking-See Note 6
R162	8500Ω	25	02018981		Damper Filter-Wire Wound-See Note 6 and 7
R163	4.7Ω	½	02100810		HV Rect. Filament-Wire Wound-See Note 6
R164	4.7Ω	½	02100810		HV Rect. Filament-Wire Wound-See Note 6
R165	600Ω	20	02110050		Bias Filter-Wire Wound-See Note 6
R166	9000Ω	30	02020720		Bleeder-Wire Wound
R167	820Ω	30	02020710		Filter-Wire Wound
R168	200Ω 5%	½	02030310		Bias Network
R169A	300Ω	15	02114700	DG-300	Filter-Wire Wound
B	250Ω	10		AB-250	Focus Coil Shunt-Wire Wound
R170	100KΩ 20%	1	02035540	BTA 100K	Bleeder
R171	100KΩ 20%	½	02035540	BTA-100K	Bleeder

Note 2. Used in early RA-108 models only.
Note 3. Model RA-105B uses 180KΩ resistor in this application.
Note 4. Not used in RA-105B models.
Note 5. Model RA-105B uses 12KΩ, 5 watt resistor in this application, Part No. 02111030.
Note 6. Used in model RA-105B only.
Note 7. This resistor is tapped at 7,500Ω, and 5,500Ω.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA: DUMONT PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC @ 3.9A	330VCT @ .380ADC 400VCT .103ADC	5VAC @ 6A	5VAC @ 2A SEC. 4 12.6VCT @ 5A	20004251 ①			

① Includes C19.

TRANSFORMER (FILAMENT)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA: DUMONT PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T2	117VAC @ .28A	6.3VAC @ 1.15A	6.3VAC @ 2.5A		20004341			

DUMONT MODELS RA-105B, RA-108A

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	DC RESISTANCE		DUMONT PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.					
T3	300Ω	600Ω SEC. 2 770Ω	20003931				Block Osc. Trans.
T4	305Ω Tap ⓐ 169Ω	10Ω Tap ⓐ .1Ω SEC. 2 0Ω SEC. 3 0Ω	2004361	A-8119	HVO-5	TFB-4	Hor. Output Trans.
T5	520Ω	5.1Ω	20003942	A-8115	A-3035	TSO-1	Vert. Output Trans.
T6A	14Ω		21004971 ②	DY-1	MD 1		Hor. Deflection Coil
B	62Ω						Vert. Deflection Coil
T6A	14Ω		21004241 ③				Hor. Deflection Coil
B	60Ω						Vert. Deflection Coil
T7	410Ω		21004251				Focus Coil

② Used in model RA-108A only.
③ Used in model RA-105B only.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		DUMONT PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T8	4.7KΩ	3.6Ω	410Ω	.5Ω	Part of SPKR.	A 3825 ¶	A-3019	RO-9	¶ Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			DUMONT PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V. C. IMP.		ST-119 ②		② Replace output transformer to match 6-8 ohm VC.
SP1A	PM	3.6Ω	18002792	MOD. P10-T	10A31 ③	③ Remount output transformer.
B	PM		18002771	ST-102 ② MOD. P12-S	12A31A ③	
	CONE DIA.	V. C. DIA.				
SP2A	9 9/16"	3/4"				
B	11 1/2"					

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ↶)	DUMONT PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.380A	85Ω	5 Henries	21004023			TR-3300 ④	④ Drill one new mounting hole.
L2	.103A	54Ω	1 Henry	21004721				

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	DUMONT PART No.	MEISSNER PART No.	
L3	Ant. Coil	0Ω		21004571		
L4	Ant. Coil	0Ω		21004571		
L5A	RF End Inductor	0Ω		21004931		
B	RF End Inductor	0Ω		21004641		Used in early production models.
L6A	RF Plate	0Ω				Part of inductuner 21004291
B	RF Plate	0Ω				Used in early production models part of inductuner 21004561.
L7A	RF End Inductor	0Ω		21004921		
B	RF End Inductor	0Ω		21004631		Used in early production models.
L8A	Mixer Grid	0Ω				Part of inductuner 21004291
B	Mixer Grid	0Ω				Used in early production models. Part of inductuner 21004561.
L9A	Bandpass Coupling	0Ω		21004941		
B	Bandpass Coupling	0Ω		21004581		Used in early production models.
L10	Inductor Ground Strap	0Ω		21004951		Not used in early production models.
L11	Bandwidth	0Ω		21004601		
L12	Fil. Choke	.1Ω		21004571		
L13A	Osc. Shunt	0Ω		21004041		
B	Osc. Shunt	0Ω		21004591		Used in early production models.
L14A	Osc. Coil	0Ω				Part of inductuner 21004291.
B	Osc. Coil	0Ω				Used in early production models. Part of inductuner 21004561.
L15A	Osc. End Inductor	0Ω		21004891		
B	Osc. End Inductor	0Ω		21004051		Used in early production models.
L16	1st Video IF	.1Ω		21004137		Violet identification dot.
L17	RF Choke	.5Ω		21004144		Brown identification dot.
L18	1st Video IF Coupling	.1Ω		21004136		Blue identification dot.
L19	2nd Video IF	.8Ω		21004138		Grey identification dot.
L20	2nd Video IF	.5Ω		21004144		Brown identification dot.
L21	2nd Video IF Coupling	.1Ω		21004135		Green identification dot.
L22	3rd Video IF	.8Ω		21004138		Grey identification dot.
L23	21.9MC Sound Trap	.1Ω		21003971		Orange identification dot.
L24	Adj. Channel Sound Trap	.1Ω		21003971		Orange identification dot.
L25	3rd Video IF	.1Ω		21004135		Green identification dot.
L26	4th Video IF	.1Ω		21004137		Violet identification dot.
L27	4th Video IF	.1Ω		21004135		Green identification dot.
L28	Peaking	1.2Ω		21004465		Orange identification dot.

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF) CONT.

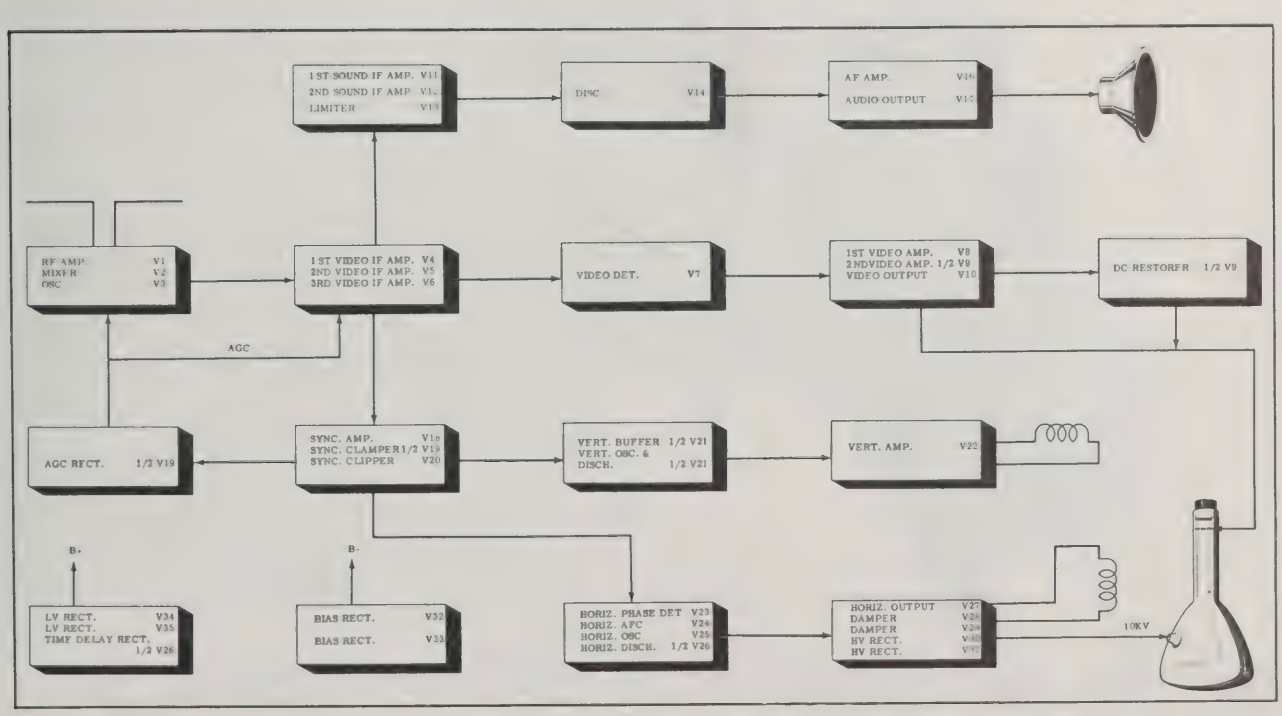
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA DUMONT PART No.	REPLACEMENT DATA MEISSNER PART No.	NOTES
L29	21.9MC Sound Trap	.1Ω		21003971		Orange identification dot.
L30	Peaking	9.9Ω		21004467		Yellow identification dot.
L31	Peaking	3.2Ω		21004655		Red and Blue identification dot.
L32	4.5MC Sound Trap	1.5Ω		21004121		Red and Grey identification dot.
L33	Peaking	5.1Ω		21004653		
L34	1st Sound IF	.1Ω	.1Ω	20003911		
L35	2nd Sound IF	.1Ω	.1Ω	20003911		
L36	3rd Sound IF	.1Ω	.1Ω	20003911		
L37	Sync. Coupling Trans.	.2Ω	.2Ω	20004391		
L38	Disc. Trans.	.8Ω	.8Ω	20003901		
L39	Horiz. Osc. Trans.	65Ω	65Ω	20003921		
L40A	Width Cont.	.3Ω		21004711		Model RA108
B	Width Cont.	.3Ω		21004711		Model RA105B
L41A	Width Coil	.2Ω		21004763		Fixed. Model RA108
B	Width Coil	.2Ω		21004762		Fixed. Model RA105B
L42A	Horiz. Lin.	41Ω		21004751		Model RA108
B	Horiz. Lin.	50Ω		21004350		Model RA105B. 5.5/20MH
L43	Fil. Choke	.1Ω				

DIAL LIGHTS

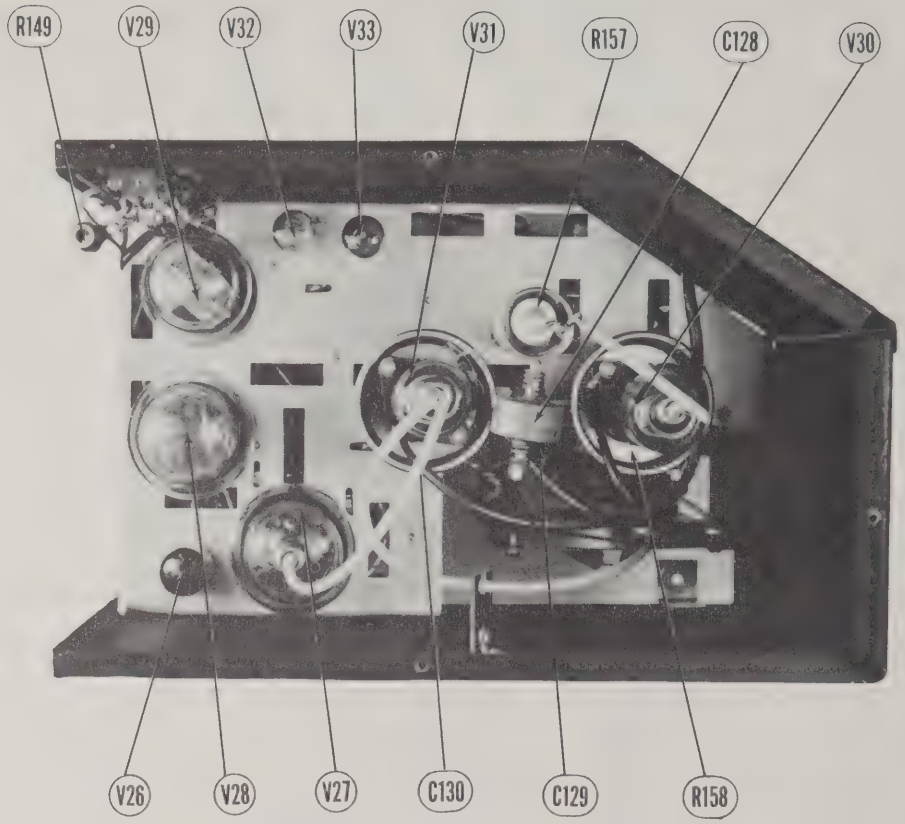
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA DUMONT PART No.	NOTES
M1	Bayonet	6-8	.15	Brown	12001310	Type #47
M2	Bayonet	6-8	.15	Brown	12001310	Type #47
M3	Bayonet	6-8	.15	Brown	12001310	Type #47

MISCELLANEOUS

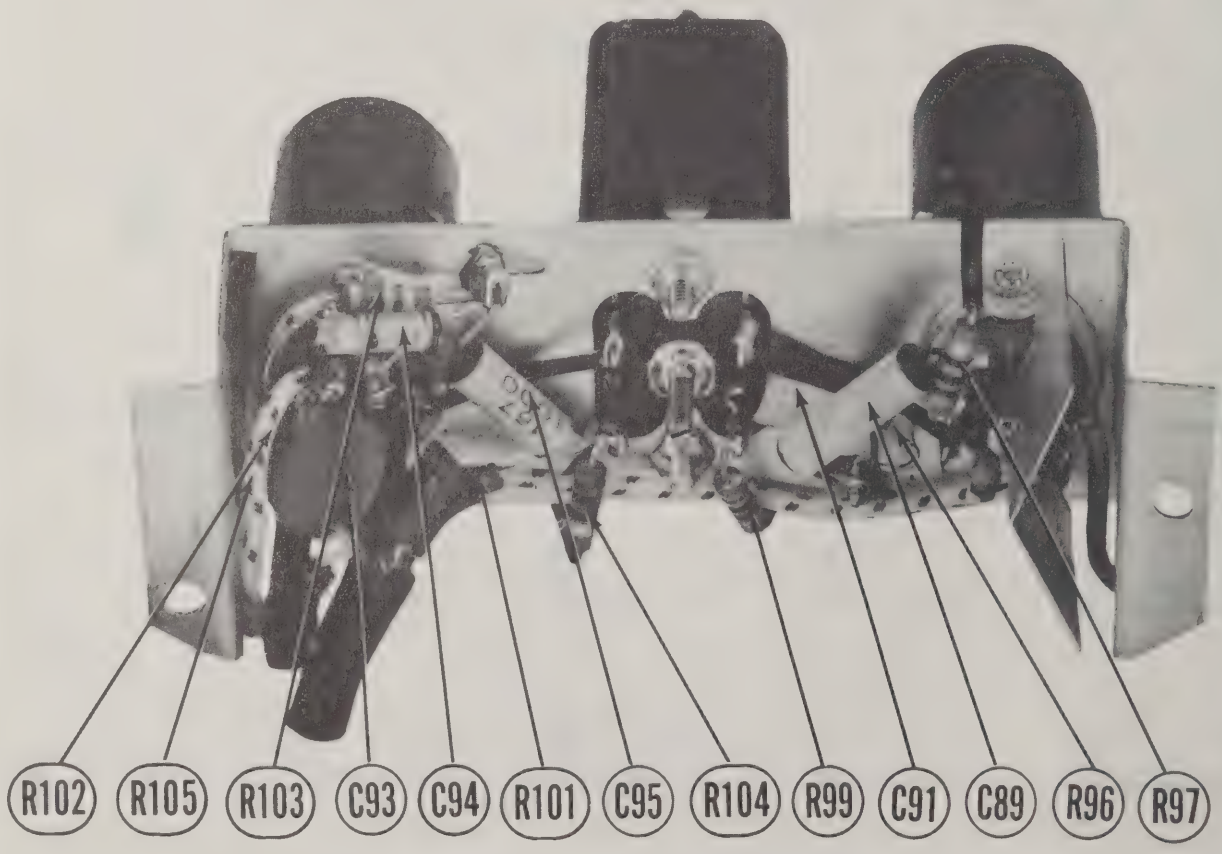
ITEM No.	PART NAME	DUMONT PART No.	NOTES
M4A	Tuner	89001502	RF Assembly
B	Tuner	89001501	RF Assembly
M5A	Tuner	89002302	Inputuner and dial assembly
B	Tuner	81000601	Inputuner and dial assembly
M6	Fuse	11000830	Type 3AG 6A. 250V
M7	Fuse	11001100	Type 3AG .25A 250V
M8A	Relay	05002410	SPST
B	Relay	05003260	SPST
M9A	Switch	05000120	Vert. position, DPDT toggle
B	Switch	05003050	Vert. position, DPDT toggle
M10A	Switch	05003351	Function. 2 deck wafer
B	Switch	05003641	Function. 2 deck wafer
M11	Switch	05002981	Width range. 3 position wafer
M12	Ion Trap	21004473	
	Knob	45000032	Tuner



BLOCK DIAGRAM



HIGH VOLTAGE COMPARTMENT



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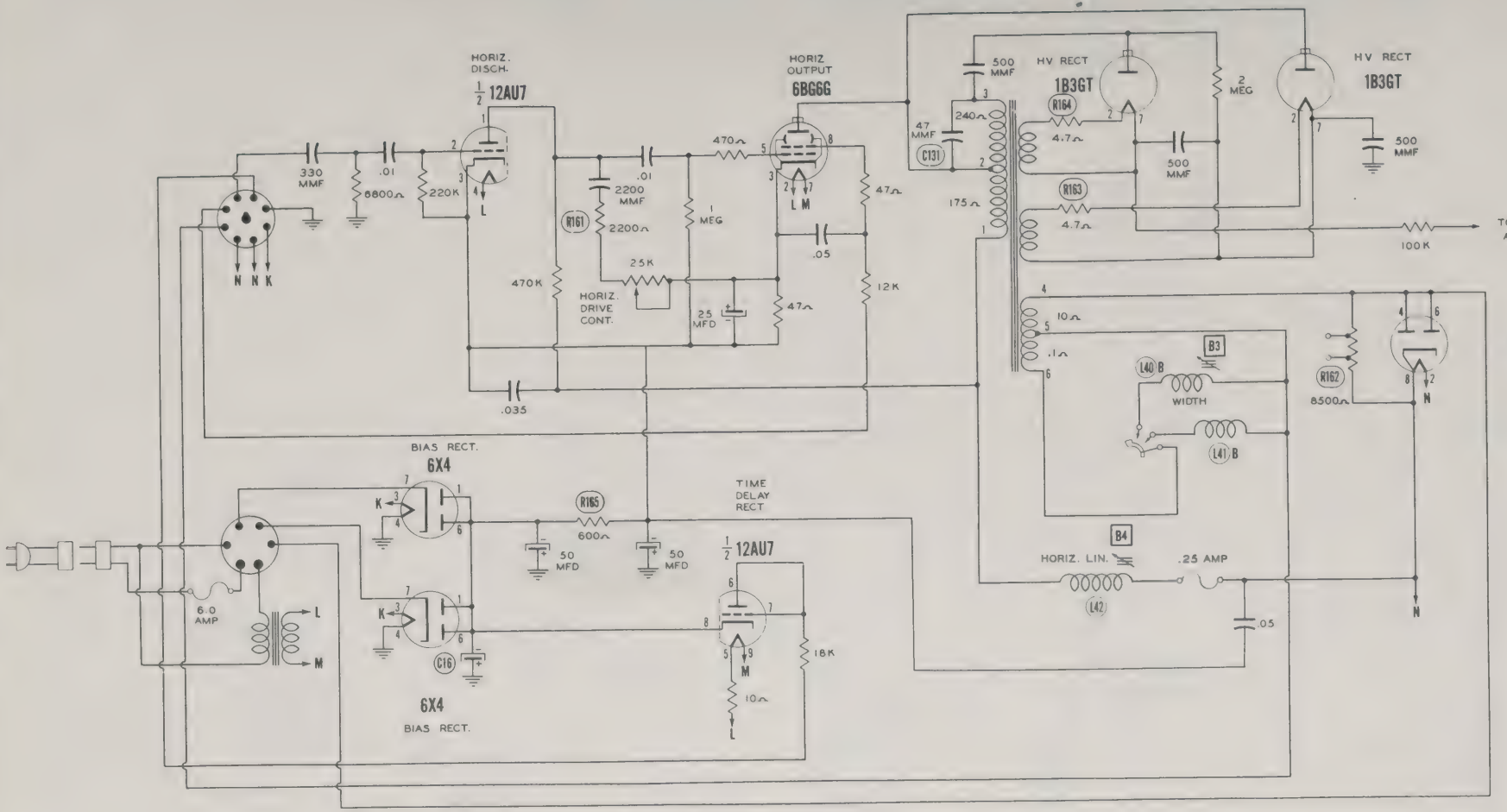

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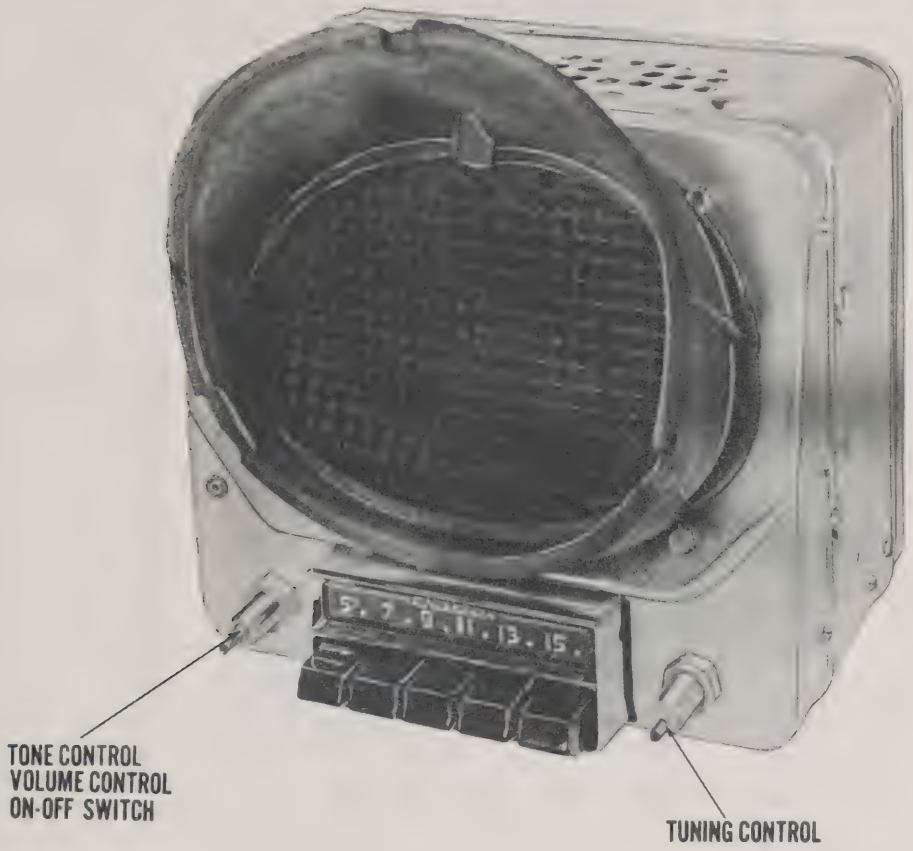
HIGH VOLTAGE SUPPLY - RA-105B

PONTIAC
MODELS 984296, 984570



PONTIAC
MODELS 984296, 984570

PONTIAC MODEL 984570

TRADE NAME	Pontiac, Models 984296, 984570
SUPPLIER	Pontiac Motors Div., General Motors, Pontiac, Michigan
TYPE SET	Battery Operated Custom-Built Automotive Superheterodyne Receiver
TUBES (EIGHT)	Types 6SK7 RF Amp., 6SA7 Converter, 6SK7 IF Amp., 6SQ7GT DET-AF, 6SQ7GT Phase Inverter-AVC, (2) 6V6GT Power Output, 0Z4 Rectifier
POWER SUPPLY	6 Volt Storage Battery — RATING 6.8 Amp. at 6 Volts DC
TUNING RANGE—BROADCAST	550-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 8 (Grid) of 6SA7 (V2). Low side to chassis.	260KC (400 ∿ Mod.)	Turn tuning gang to the high freq. stop.	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.	68MMFD	High side to ant. connector. Low side to chassis.	1615KC	"	"	A5, A6, A7	Check the position of the oscillator slug. The slotted end of the slug should be 1 - 25/32 inches from the mounting end of the coil. Adjust A5, A6, and A7 for maximum output.
3.	68MMFD	"	1000KC	Tune for max. output	"	A8, A9	Adjust for maximum output. Set pointer to 1000 by means of the pointer adjustment screw. Repeat steps 2 and 3 until no further improvement can be made.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: PONTIAC PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1A	RF Amp.	7237751	6SK7	8N	Model 984570
B	RF Amp.	1213562	7A7	8V	Model 984296
V2A	Converter	7237752	6SA7	8R	Model 984570
B	Converter	1213981	7Q7	8AL	Model 984296
V3A	IF Amp.	7237751	6SK7	8N	Model 984570
B	IF Amp.	1213562	7A7	8V	Model 984296
V4A	DET.-AF Amp.	7237753	6SQ7GT	8Q	Model 984570
B	DET.-AF Amp.	1213565	7B6	8W	Model 984296
V5A	Phase Inv.-AVC	7237753	6SQ7GT	8Q	Model 984570
B	Phase Inv.-AVC	1213565	7B6	8W	Model 984296
V6A	Power Output	1213793	6V6GT	7AC	Model 984570
B	Power Output	1213568	7C5	6AA	Model 984296
V7A	Power Output	1213793	6V6GT	7AC	Model 984570
B	Power Output	1213568	7C5	6AA	Model 984296
V8	Rectifier	1211924	0Z4	4R	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: PONTIAC PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	15	400	M908	AFH32I4A			EL-342	■ Filter
B	10	400						▲ Filter
C	20	25						Output Plate Bypass
C2	.05	200	E503	P288-05			TM-15	AVC Filter
C3	33	300	G330	1468-00004	D6-330	GP1K-33	1FM-44	RF Coupling
C4	39	300	G390	1469-00004	D6-390	GP1K-39	MS-44	Fixed Trimmer
C5	300		7258445	SI300JN080		N080-335-300		Fixed Trimmer
C6	.05	400	E503	P488-05			TM-15	Decoupling
C7	10	300	G100	1468-00001	D6-100	GP1K-10	MS-41	IF Coupling-See Note
C8	.002	600	E202	P688-002	D6-202	GP2M-002	TM-22	Tone Compensation
C9	330	500	G331	1468-00035	D6-331	GP2K-330	1FM-335	Tone Compensation
C10	.0015	200	1218499	P288-0015	D6-152	GP2L-0ul5	TM-21	Tone Compensation
C11	.001	600	E102	P688-001	D6-102	GP2L-001	TM-21	Audio Coupling
C12	.001	600	7239188	P688-001	D6-102	GP2L-001	TM-21	AF Amp. Plate Bypass
C13	.01	600	1208600	P688-01	D6-103	821-01	TM-11	Audio Coupling
C14	.005	600	7230767	P688-005	D6-502	811-005	TM-25	Audio Coupling
C15	.02	400	7258124	P488-02			TM-12	Audio Coupling
C16	.006	1600	H602	P1688-006			MB-26	Buffer

Note. Model 984296 uses 47MMF in this application MFGR'S Part No. G470.

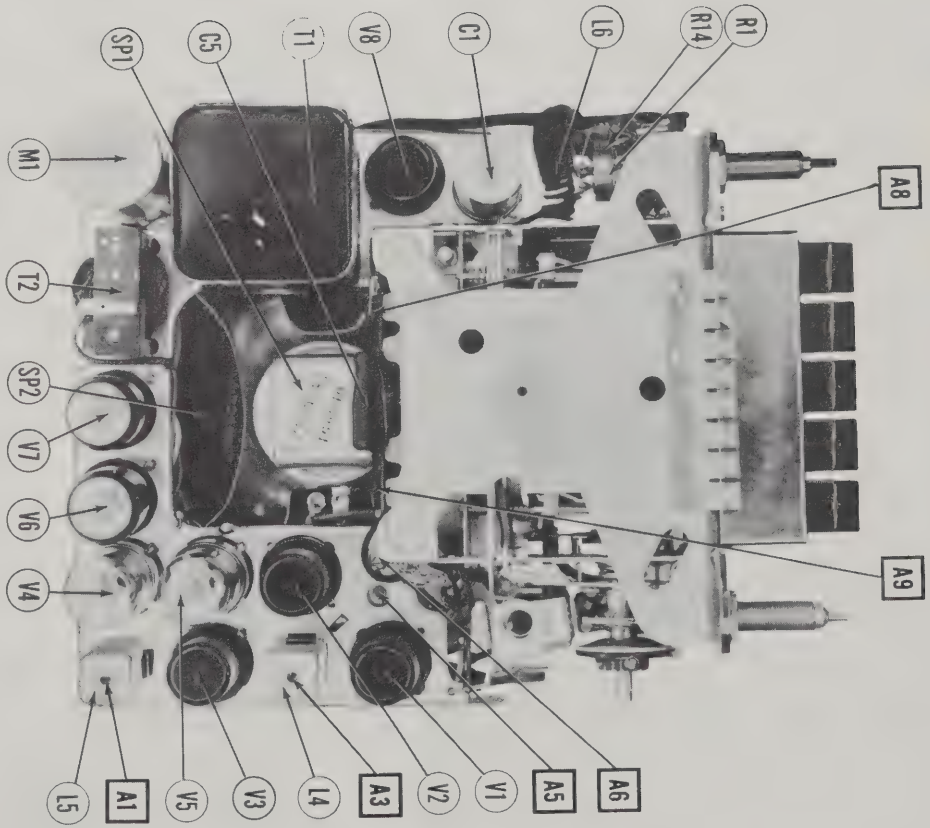
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PONTIAC PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	Switch		7257708				Tone Switch
B	300KΩ	½					Volume Control and Switch - Tapped @ 50KΩ

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PONTIAC PART No.	IRC PART No.	IDENTIFICATION CODES
R2	150Ω	½	A151	BW-½-150	RF Cathode-See Note 1
R3	15KΩ	1	B153	BTA-15K	RF Plate-See Note 2
R4	2.2 Meg.	½	A225	BTS-2.2 Meg.	AVC Network
R5	330KΩ	½	A334	BTS-330K	AVC Network
R6	22KΩ	½	A223	BTS-22K	Osc. Grid
R7	6.8 Meg.	½	A685	BTS-6.8 Meg.	AVC Network

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	PONTIAC PART No.	IRC PART No.	
R8	15KΩ	2	C153	BT-2-15K	Screen Dropping
R9	1 Meg.	½	A105	BTS-1 Meg.	AVC Network
R10	150Ω	½	A151	BW-½-150	IF Cathode-See Note 1
R11	47KΩ	½	A473	BTS-47K	Diode Filter
R12	56KΩ	½	A563	BTS-56K	Tone Compensation
R13	180KΩ	½	A184	BTS-180K	Tone Compensation
R14	100KΩ	½	A104	BTS-100K	Tone Compensation
R15	6.8 Meg.	½	A685	BTS-6.8 Meg.	AF Amp. Grid
R16	33Ω	½	A330	BW-½-33	AF Amp. Cathode
R17	220KΩ	½	A224	BTS-220K	AF Amp. Plate
R18	1 Meg.	½	A105	BTS 1 Meg.	Diode Load
R19	6.8 Meg.	½	A685	BTS-6.8 Meg.	Phase Inv. Grid
R20	2700Ω	½	A272	BTS 2700	Phase Inv. Cathode
R21	220KΩ	½	A224	BTS-220K	Phase Inv. Plate
R22	180KΩ	½	A184	BTS-180K	Voltage Divider
R23	220KΩ	½	A224	BTS-220K	Output Grid
R24	220KΩ	½	A224	BTS-220K	Output Grid
R25	100KΩ	½	A104	BTS-100K	Output Grid
R26	330Ω	1	B331	BW-1-330	Output Cathode-Wire Wound
R27	150Ω	½	A151	BW-½-150	AF Feedback
R28	1800Ω	2	*	BW-2-1800	Filter-Wire Wound
R29	220Ω	1	B221	BW-1-220	Hash Suppression

* Replace with one 2700Ω, 2 watt resistor, Part No. C272 in parallel with one 5600Ω 1 watt resistor, Part No. B562.
Note 1. Model 984296 uses 270Ω resistor in this application.
Note 2. Model 984296 uses 10KΩ, 1 watt resistor in this application.

TRANSFORMER (VIBRATOR)

ITEM No.	RATING				REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	SEC. 3	PONTIAC PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
T1	6VDC @ 4.2A	580VCT .059ADC			7255881	P-4065 ①	P-4076 ①		

① Drill new mounting holes.

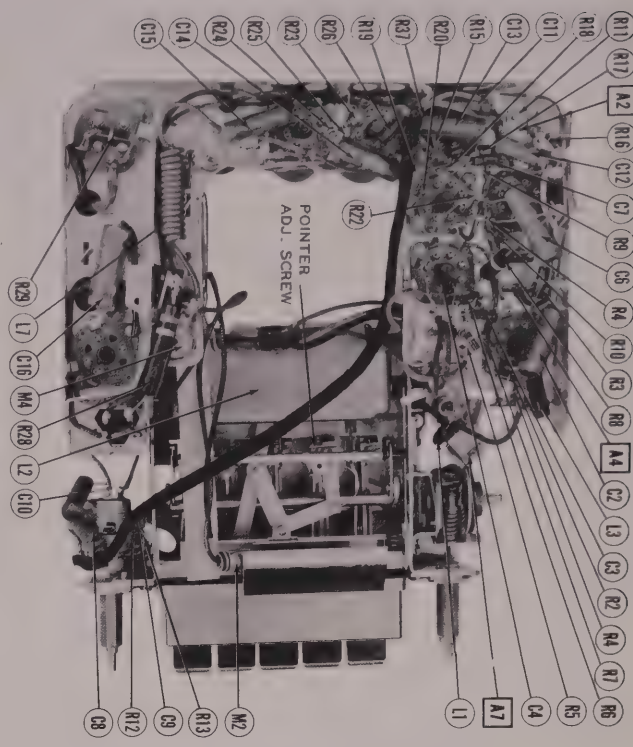
TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		PONTIAC PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	10KΩ CT	3.9Ω	460Ω CT	.2Ω	7240453	A-3823 ②	A-2936 ②	RO-304 ②	② Bend mounting tabs down. Drill or file chassis to fit.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			PONTIAC PART No.	JENSEN PART No.	QUAM PART No.	
SP1	FIELD	V. C. IMP.	7256355	ST-810 MOD. P69-V	69A2	
	PM	3.9Ω				
	CONE DIA.	V. C. DIA.				
SP2	6 1/8" x 9"	1"				

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	PONTIAC PART No.	MEISSNER PART No.	
L1	Antenna Hash Choke	1Ω		7255738		
L2A	Antenna Coil	11Ω		7257956		
B	RF Plate	11Ω				
C	Osc. Coil	1.1Ω	4.2Ω			
L3	Antenna Hash Choke	5Ω		7240251		
L4	1st IF	52Ω	52Ω	1219508		
L5	2nd IF	50Ω	50Ω	1219509		
L6A	Hash Choke	0Ω		1217846		Model 984570
B	Hash Choke	0Ω		7241701		Model 984296
L7	Hash Choke	0Ω		7241708		

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA			INSTALLATION NOTES
				PONTIAC PART No.	AEROVOX PART No.	RADIART PART No.	
M1	Int.	6V	115 ∿	8542	A-100	5301	

DIAL LIGHTS

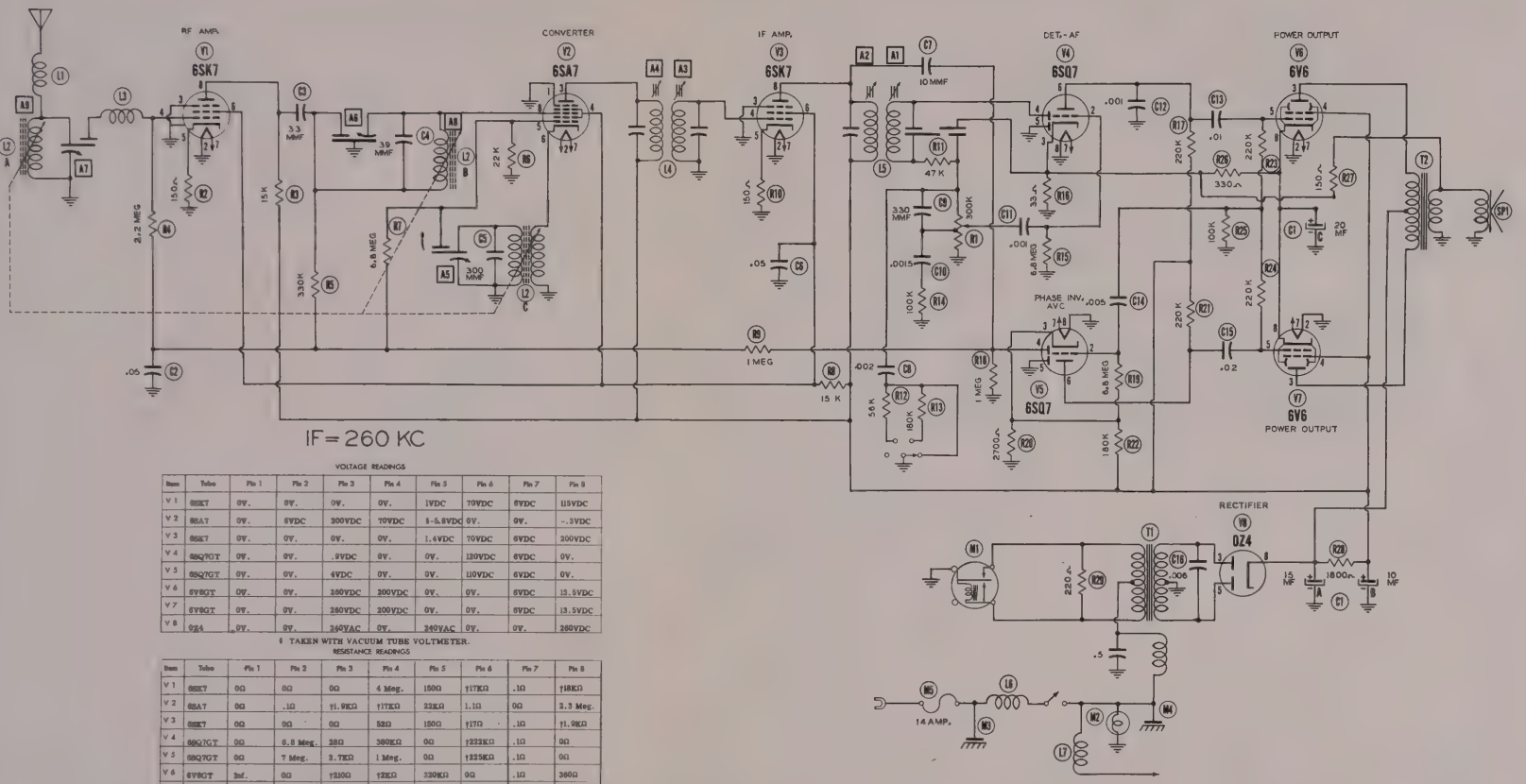
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					PONTIAC PART No.		
M2	Bayonet	6-8	.25	Blue	187189		Type #44

MISCELLANEOUS

ITEM No.	PART NAME	PONTIAC PART No.	NOTES
M3	Spark Plate	7241259	
M4	Spark Plate	1217848	
M5	Fuse	147685	14 Amp.
A5	Dual Trimmer	7242454	Osc. Adj.
A6			RF Adj.
A7	Trimmer	7257959	Ant. Adj.
	Dial	7257721	

PUSHBUTTON SET-UP

PULL THE BUTTON TO THE RIGHT AND ALL THE WAY OUT. TUNE IN THE DESIRED STATION MANUALLY. PUSH BUTTON IN AS FAR AS IT WILL GO. REPEAT THE PROCEDURE FOR EACH PUSHBUTTON.



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SK7	0V.	6V.	0V.	0V.	1VDC	70VDC	6VDC	115VDC
V 2	6SA7	0V.	6VDC	200VDC	70VDC	3-5.6VDC	0V.	0V.	-.3VDC
V 3	6SK7	0V.	0V.	0V.	0V.	1.6VDC	70VDC	6VDC	200VDC
V 4	6SQ7GT	0V.	0V.	.9VDC	0V.	0V.	120VDC	6VDC	0V.
V 5	6SQ7GT	0V.	0V.	4VDC	0V.	0V.	110VDC	6VDC	0V.
V 6	6V6GT	0V.	0V.	280VDC	200VDC	0V.	0V.	6VDC	13.5VDC
V 7	6V6GT	0V.	0V.	280VDC	200VDC	0V.	0V.	6VDC	13.5VDC
V 8	0Z4	0V.	0V.	240VAC	0V.	240VAC	0V.	0V.	260VDC

§ TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SK7	0Ω	0Ω	0Ω	4 Meg.	150Ω	†17KΩ	.1Ω	†18KΩ
V 2	6SA7	0Ω	.1Ω	†1.9KΩ	†17KΩ	22KΩ	1.1Ω	0Ω	2.3 Meg.
V 3	6SK7	0Ω	0Ω	0Ω	52Ω	150Ω	†17Ω	.1Ω	†1.9KΩ
V 4	6SQ7GT	0Ω	6.8 Meg.	28Ω	380KΩ	0Ω	†222KΩ	.1Ω	0Ω
V 5	6SQ7GT	0Ω	7 Meg.	2.7KΩ	1 Meg.	0Ω	†225KΩ	.1Ω	0Ω
V 6	6V6GT	Inf.	0Ω	†210Ω	†2KΩ	320KΩ	0Ω	.1Ω	380Ω
V 7	6V6GT	0Ω	0Ω	†210Ω	†2KΩ	320KΩ	100KΩ	.1Ω	380Ω
V 8	0Z4	0Ω	Inf.	300Ω	Inf.	300Ω	Inf.	Inf.	130KΩ

† MEASURED FROM PIN 8 OF V8.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Battery voltage maintained at 6 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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SILVERTONE MODELS 9133, 9144
(CH. 101.866, RADIO CH. 101.859)

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MODEL 9133

SILVERTONE MODELS 9133, 9144
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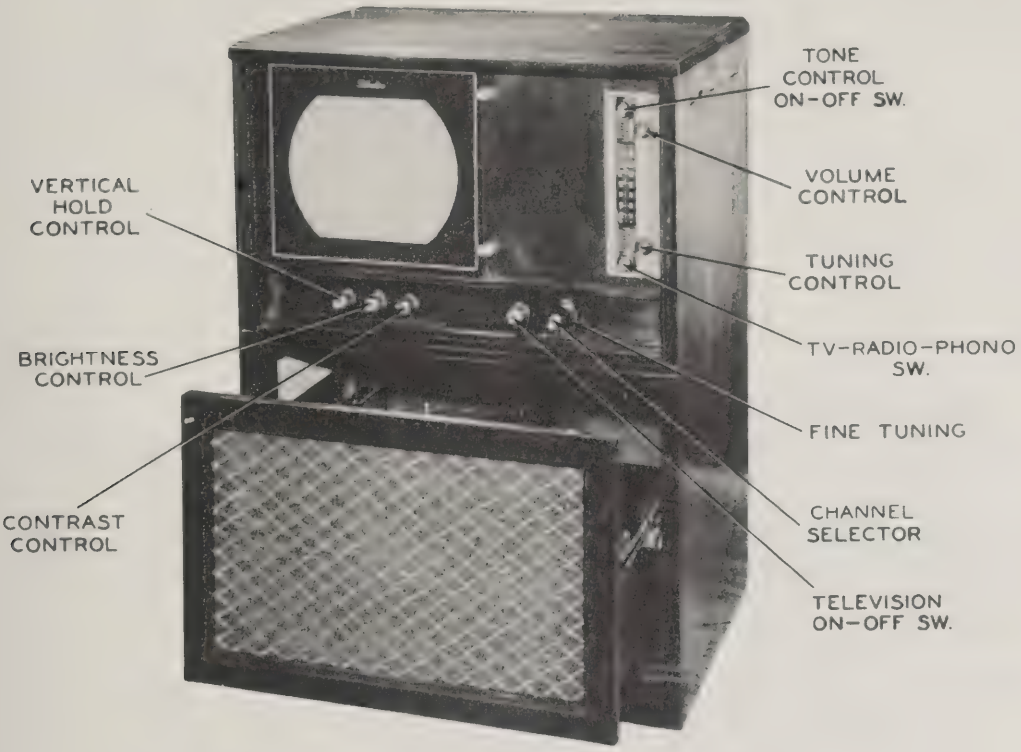

SILVERTONE MODEL 9133

TRADE NAME	Silvertone Models 9133, 9134 (TV Ch. 101.866 and Radio Ch. 101.859)
SUPPLIER	Sears Roebuck and Co., 925 Homan Ave., Chicago, Illinois
TYPE SET	AM-FM-TV-Phono Combination Receiver
TUBES	Thirty Three
POWER SUPPLY	110-120 Volts AC-60 Cycles
TUNING RANGE	AM 540-1600KC, FM 88 108MC, TV Channels 2 thru 13
RATING	2.26 Amp. @ 117 Volts AC (TV), .43 Amp. @ 117 Volts AC (Radio)

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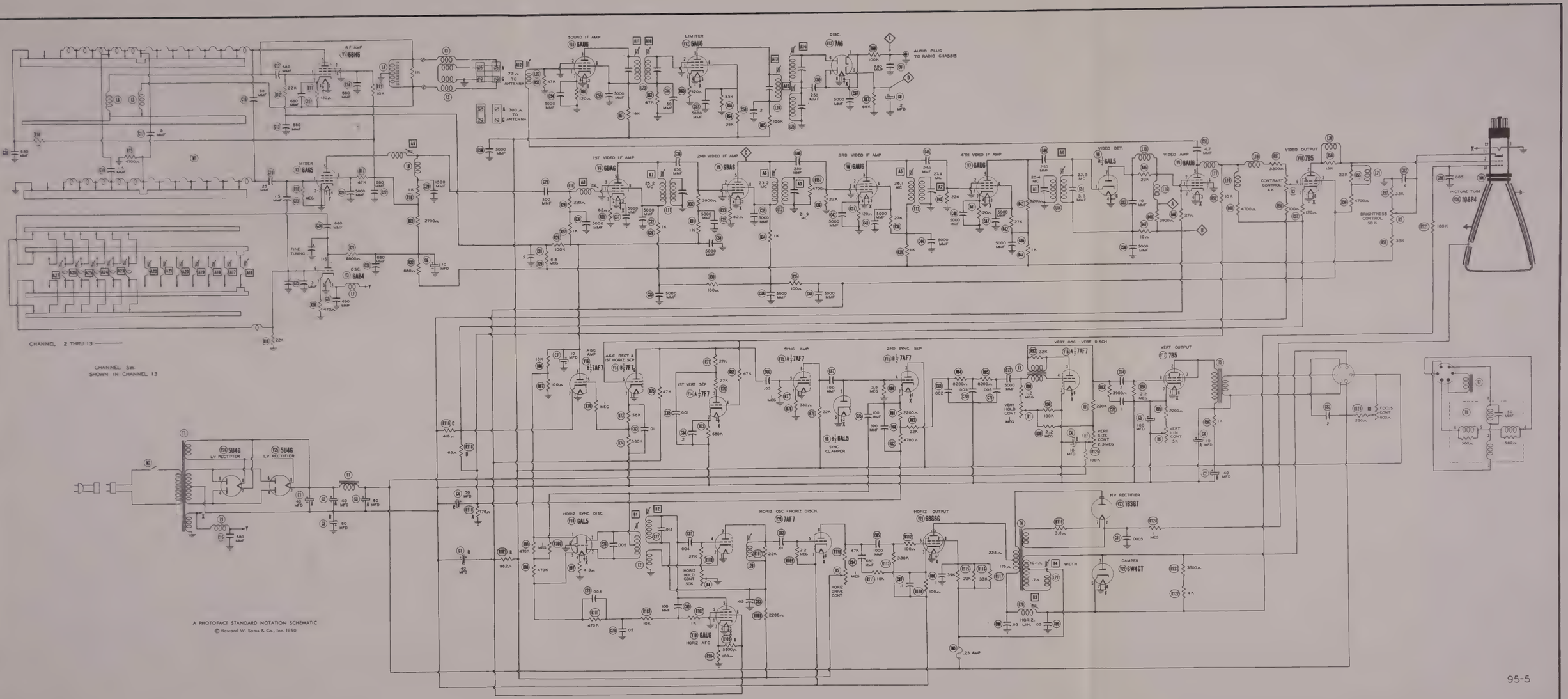

95-5

SILVERTONE MODELS 9133, 9134
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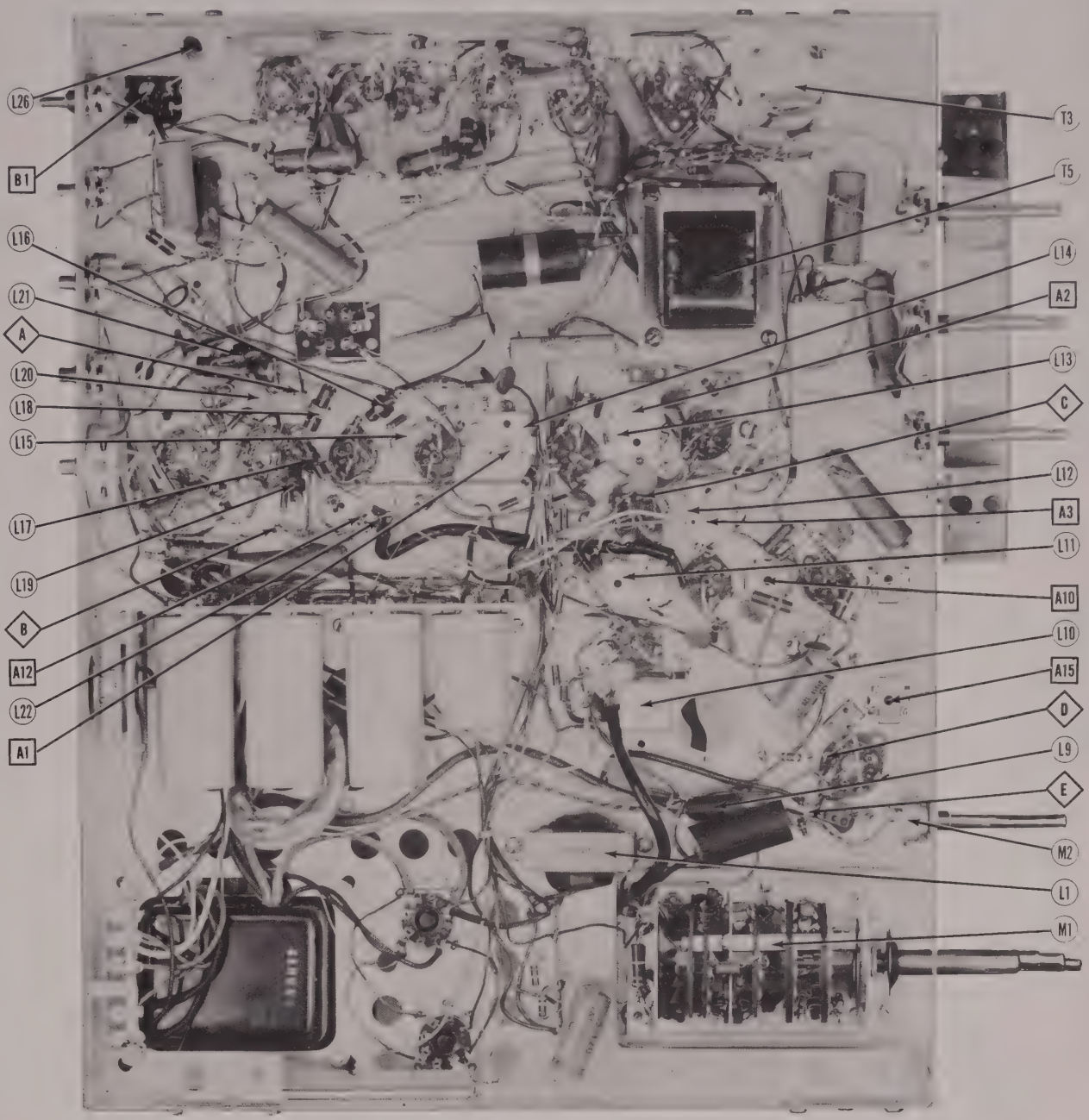
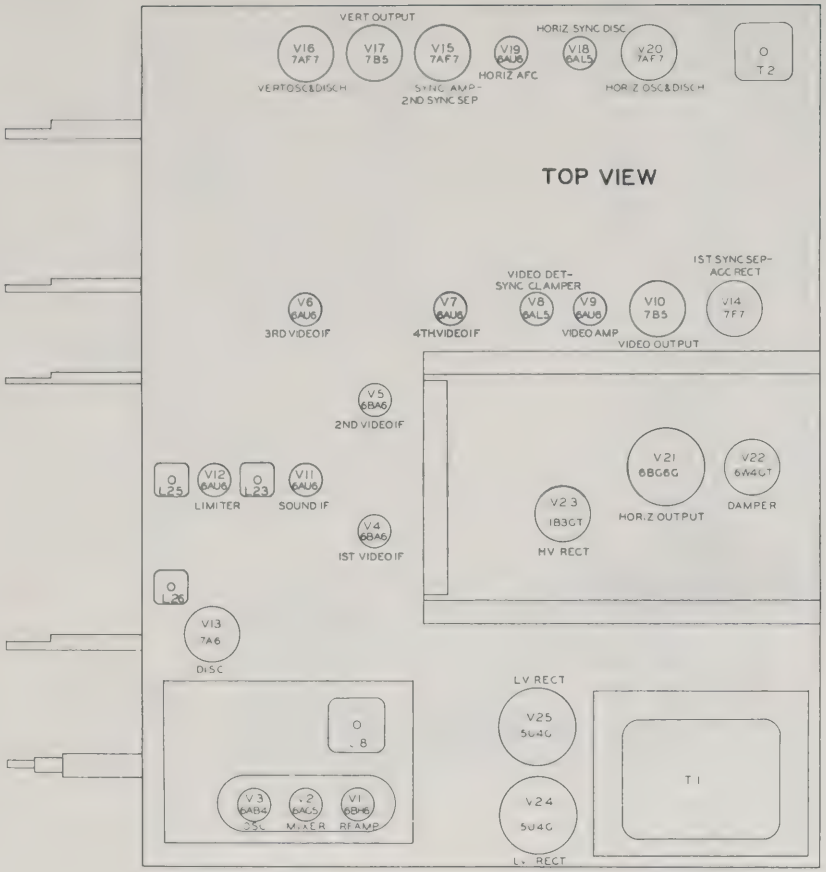
TV CHASSIS TOP VIEW



TV CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION



TUBE PLACEMENT CHART

SILVERTONE MODELS 9133, 9134
(Ch. 101.866, RADIO Ch. 101.859)

TV ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To eliminate the high voltage shock hazard disconnect the filament voltage from the horizontal output tube (V21).
Remove the horizontal oscillator tube (V20) to eliminate erratic indications on the oscilloscope.

VIDEO IF ALIGNMENT

Connect the negative lead of a 3 volt battery to pin 6 of the AGC tube (V14), connect the positive lead to chassis.
Note that the VTVM case is -125 volts with respect to the chassis, avoid grounding or touching the VTVM case.
Remove the local oscillator tube (V3) to prevent erroneous indications.
Before beginning step 8, connect a 330Ω resistor between pins 5 and 6 of the first video amplifier tube (V4). Remove the second video amplifier tube (V5) from its socket.
Connect the vertical input of the oscilloscope through the detector probe shown in figure 2.
Remove the 330 ohm resistor and detector probe after step 8.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	.005MFD	High side to pin 1 (Grid) of 6BA6 (V4). Low side to chassis.	20.4MC (Unmod.)	Any	DC Probe to Point ◇A. Common to Point ◇B.	A1	Adjust for MINIMUM indication.
2.	.005MFD	"	27.9MC	"	"	A2	"
3.	.005MFD	"	21.9MC	"	"	A3	"
4.	.005MFD	"	23.5MC	"	"	A4	Adjust for maximum deflection.
5.	.005MFD	"	26.1MC	"	"	A5	"
6.	.005MFD	"	23.2MC	"	"	A6	"
7.	.005MFD	"	25.2MC	"	"	A7	"

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	24MC (10MC SWP)	21.9MC 26.4MC	Any	Vert. Amp. thru detector probe (Fig. 2) to point ◇C. Low side to chassis.	A8, A9	Adjust for response curve similar to Fig. 1 with markers as shown.
9.	Direct	"	"	21.9MC 23.1MC 26.4MC	"	Vert. Amp. to Point ◇A. Low side to chassis.		Adjust for response curve similar to Fig. 3 with markers as shown. If necessary retouch A4 thru A9 for optimum response.

SOUND IF ALIGNMENT

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	.01MFD	High side to pin 1 (Grid) of 6AU6 (V9). Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any channel not used locally.	Vert. Amp. to Point ◇D. Low side to chassis.	A10, A11, A12, A13	Adjust for maximum amplitude and symmetry as per Fig. 4
11.	.01MFD	"	"	"	"	Vert. Amp. to Point ◇E. Low side to chassis.	A14, A15	Adjust A14 and A15 for straightness of crossover lines with 4.5MC occurring at center as per Fig 5. Slightly retouch A13, A14 and A15 for maximum amplitude of crossover lines while maintaining straightness and proper position of 4.5MC marker.

OSCILLATOR ALIGNMENT

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
Replace the local oscillator tube (V3).
Set the fine tuning control to the mid-position of its range.
The oscillator adjustments for channels 2 through 6 are brass slugs. The adjustments for channels 7 through 13 are made by expanding or compressing the coil turn for each channel. It is essential that the adjustments be made in reverse order, that is, start with channel 13 and work towards channel 2.
The RF and mixer circuits fof this receiver are pre-set at the factory and are normally very stable, they should not require adjustment in the field.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12.	Two 120Ω carbon res.	Across antenna terminals with 120Ω in each lead.	213MC (10MC SWP)	211.25MC 215.75MC	13	Vert. Amp. to Point ◇A. Low side to chassis.	A16	Expand or compress coil turn to place sound marker as shown in figure 6. The video marker should be at 50%.
			207MC (10MC SWP)	205.25MC 209.75MC	12		A17	
			201MC (10MC SWP)	199.25MC 203.75MC	11		A18	
			195MC (10MC SWP)	193.25MC 197.75MC	10		A19	
			189MC (10MC SWP)	187.25MC 191.75MC	9		A20	
			183MC (10MC SWP)	181.25MC 185.75MC	8		A21	
			177MC (10MC SWP)	175.25MC 179.75MC	7		A22	
13.	"	"	85MC (10MC SWP)	83.25MC 87.75MC	6	"	A23	Adjust to place sound marker as shown in Fig. 6. The video marker should be at 50%.
			79MC (10MC SWP)	77.25MC 81.75MC	5		A24	
			69MC (10MC SWP)	67.25MC 71.75MC	4		A25	
			63MC (10MC SWP)	61.25MC 65.75MC	3		A26	
			57MC (10MC SWP)	55.25MC 59.75MC	2		A27	

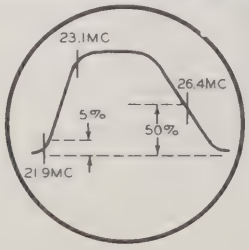


FIG.1

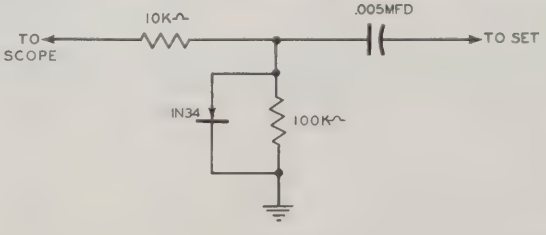


FIG.2

RADIO ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

AM ALIGNMENT

Remove the dial backplate to expose the dummy dial.
To set pointer turn tuning cap fully closed and set pointer to last reference mark at low frequency end of dial.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
14	.1MFD	High side to pin 1 (Grid) of 7F8 (V27). Low side to chassis.	455KC (400 ∿ Mod.)	AM (third pos. counter-clock-wise)	Tuning gang fully open	Across voice coil	A28, A29, A30, A31, A32	Adjust for maximum output.
15	.1MFD	"	1600KC	"	1600KC	"	A33	"
16	.1MFD	"	1400KC	"	Tune for max. output	"	A34	"

FM IF ALIGNMENT

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
17	.01MFD	High side to pin 1 (Grid) of 7F8 (V27). Low side to chassis.	10.7MC (450KC SWP)	FM (max. CCW)	Point of non-interference	Vert. Amp. to Point (F). Low side to chassis.	A35, A36, A37, A38, A39	Adjust for maximum amplitude and symmetry as per Fig 7.
18	.01MFD	"	"	"	"	Vert. Amp. to Point (G). Low side to chassis.	A40, A41	Adjust A40 and A41 for straightness of crossover lines with 10.7MC occurring at center as per Fig 8. Slightly retouch A35, A40 and A41 for maximum amplitude of crossover lines while maintaining straightness and proper position of 10.7MC marker.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
19	Two 120Ω carbon res.	Across antenna terminals 2 and 4 with 120Ω in each lead.	108MC (Unmod.)	FM	108MC	DC Probe to Point (F). Common to chassis.	A41	Adjust for maximum deflection. If two peaks are noted, use the one with least capacity.
20	"	"	106MC (Unmod.)	"	106MC	"	A42	Adjust for maximum deflection.

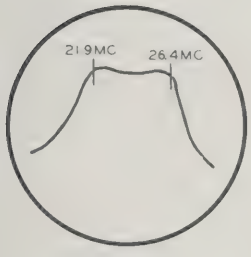


FIG. 3

FIG. 4

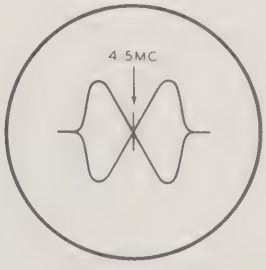


FIG. 5

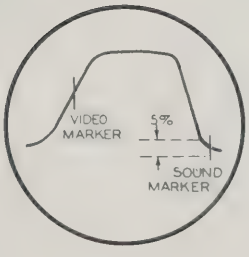


FIG. 6

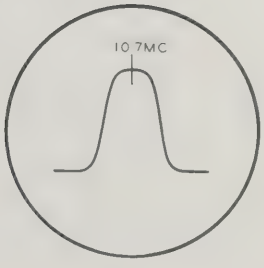


FIG. 7

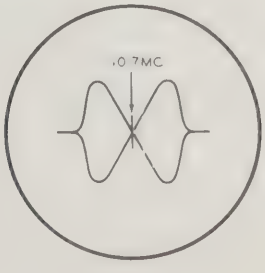


FIG. 8

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BH6	1.4VDC	1.8VDC	0V.	6.3VAC	165VDC	140VDC	0V.		
V 2	6AG5	-2VDC	0V.	0V.	6.3VAC	172VDC	120VDC	0V.		
V 3	6AB4	195VDC	0V.	0V.	6.3VAC	195VDC	$-1VDC	3.4VDC		
V 4	6BA6	.2VDC	0V.	6.3VAC	0V.	135VDC	135VDC	1.6VDC		
V 5	6BA6	.2VDC	0V.	6.3VAC	0V.	135VDC	135VDC	1.6VDC		
V 6	6AU6	0V.	0V.	6.3VAC	0V.	235VDC	155VDC	1.2VDC		
V 7	6AU6	0V.	0V.	6.3VAC	0V.	165VDC	150VDC	1.2VDC		
V 8	6AL5	¶-.4VDC	¶.3VDC	6.3VAC	0V.	0V.	0V.	¶.3VDC		
V 9	6AU6	¶-.6VDC	¶.3VDC	6.3VAC	0V.	¶73VDC	¶130VDC	¶.3VDC		
V 10	7B5	0V.	♦155VDC	♦195VDC	♦-24VDC	♦-24VDC	♦-19VDC	♦1.2VDC	6.3VAC	
V 11	6AU6	0V.	0V.	.6.3VAC	0V.	115VDC	115VDC	.8VDC		
V 12	6AU6	-.1VDC	0V.	6.3VAC	0V.	20VDC	80VDC	.4VDC		
V 13	7A6	6.3VAC	.5VDC	.3VDC	0V.	0V.	0V.	.3VDC	0V.	
V 14	7F7	0V.	¶75VDC	¶180VDC	¶70VDC	¶70VDC	¶300VDC	¶75VDC	6.3VAC	
V 15	7AF7	6.3VAC	♦7.3VDC	♦290VDC	♦-.4VDC	-.1VDC	110VDC	2.3VDC	0V.	
V 16	7AF7	0V.	¶0V.	¶65VDC ¶225VDC	¶-22VDC	▲-2.5VDC	▲50VDC	▲0V.	6.3VAC	
V 17	7B5	0V.	¶370VDC	¶370VDC	¶400VDC	¶370VDC	¶0V.	¶33VDC ¶42VDC	6.3VAC	
V 18	6AL5	0V.	-20VDC	6.3VAC	1 VAC	1.4VDC	0V.	-19VDC		
V 19	6AU6	.7VDC	0V.	6.3VAC	0V.	200VDC	160VDC	20VDC		
V 20	7AF7	0V.	.1VDC	200VDC	-13VDC	¶-43VDC	¶77VDC	¶0V.	6.3VAC	
V 21	6BG6G	0V.	0V.	¶10VDC	¶-24VDC	¶-24VDC	¶0V.	6.3VAC	¶290VDC	TOP CAP *
V 22	6W4GT	375VDC	0V.	380VDC	290VDC	290VDC	380VDC	0V.	6.3VAC	
V 23	1B3GT	* DO NOT MEASURE.								
V 24	5U4G	0V.	290VDC	0V.	380VAC	0V.	380VAC	0V.	290VDC	
V 25	5U4G	0V.	290VDC	0V.	380VAC	0V.	380VAC	0V.	290VDC	
V 26	10BP4	0V.	125VDC	PIN 10 350VDC	PIN 11 65VDC	PIN 12 6.3VAC				

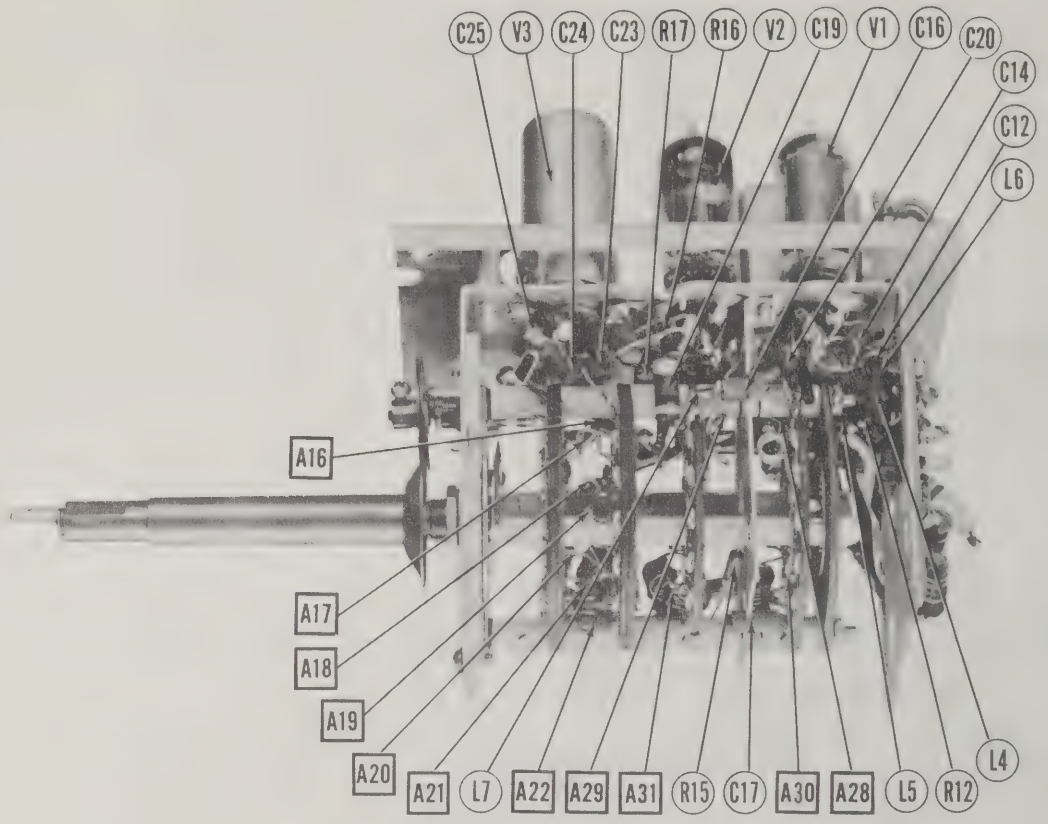
¶ MEASURED FROM PIN 7 OF V20.
♦ MEASURED FROM JUNCTION OF R118A and R118B.
▲ MEASURED FROM JUNCTION OF R118B and R118C.
* DO NOT MEASURE.

RESISTANCE READINGS

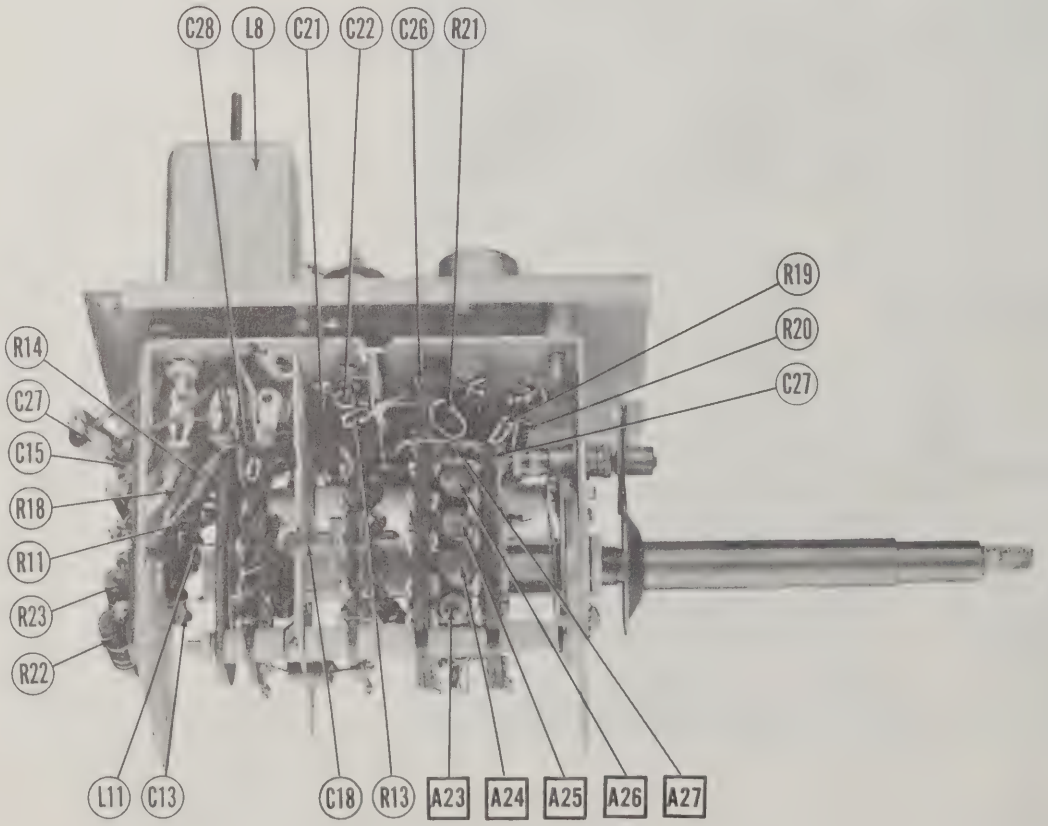
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BH6	130KΩ	150Ω	0Ω	.1Ω	†5KΩ	†13KΩ	0Ω		
V 2	6AG5	1 Meg.	0Ω	0Ω	.1Ω	†5KΩ	†50KΩ	0Ω		
V 3	6AB4	†7.5KΩ	Inf.	0Ω	.1Ω	†7.5KΩ	22KΩ	470Ω		
V 4	6BA6	11.3KΩ	0Ω	.1Ω	0Ω	†2.5KΩ	†2.5KΩ	82Ω		
V 5	6BA6	15KΩ	0Ω	.1Ω	0Ω	†2.4KΩ	†2.4KΩ	82Ω		
V 6	6AU6	22KΩ	0Ω	.1Ω	0Ω	†1.3KΩ	†28KΩ	120Ω		
V 7	6AU6	22KΩ	0Ω	.1Ω	0Ω	†9.5KΩ	†28KΩ	120Ω		
V 8	6AL5	¶10Ω	3.9 Meg.	.1Ω	0Ω	0Ω	0Ω	¶4KΩ		
V 9	6AU6	¶4KΩ	¶27Ω	.1Ω	0Ω	¶4KΩ	0Ω	¶27Ω		
V 10	7B5	0Ω	†6KΩ	†1000Ω	¶3.5KΩ	¶3.5KΩ	¶700Ω	.1Ω		
V 11	6AU6	47KΩ	0Ω	.1Ω	0Ω	†19KΩ	†19KΩ	120Ω		
V 12	6AU6	47KΩ	0Ω	.1Ω	0Ω	†100KΩ	†20KΩ	120Ω		
V 13	7A6	.1Ω	68KΩ	Inf.	Inf.	0Ω	3.5Ω	Inf.	0Ω	
V 14	7F7	0Ω	680KΩ	†100KΩ	60KΩ	14KΩ	†47KΩ	620KΩ	.1Ω	
V 15	7AF7	.1Ω	8KΩ	†170Ω	3.9 Meg.	1 Meg.	†22KΩ	330Ω	0Ω	
V 16	7AF7	0Ω	¶0Ω	†1.4 Meg. †330KΩ	1.5 Meg.	1.6 Meg.	10KΩ	¶420Ω	.1Ω	
V 17	7B5	0Ω	†2KΩ	†2KΩ	5KΩ	220Ω	2.2 Meg.	7KΩ 2.2KΩ	.1Ω	
V 18	6AL5	100Ω	1.5 Meg.	.1Ω	2Ω	1 Meg.	0Ω	1.5 Meg.		
V 19	6AU6	1.5 Meg.	0Ω	.1Ω	0Ω	†2.5KΩ	†1.3KΩ	100Ω		
V 20	7AF7	0Ω	10Ω	†2.3KΩ	70KΩ 25KΩ	2.2 Meg.	† 1 Meg. †47KΩ	750Ω	.1Ω	
V 21	6BG6G	Inf.	0Ω	¶100Ω	330KΩ	330KΩ	¶0Ω	.1Ω	†9KΩ	TOP CAP †7KΩ
V 22	6W4GT	†100KΩ	Inf.	†7.5KΩ	†25Ω	†36Ω	†7.5KΩ	0Ω	.1Ω	
V 23	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP †7.5KΩ
V 24	5U4G	Inf.	8KΩ	Inf.	¶16.2Ω	Inf.	¶15.8Ω	Inf.	8KΩ	
V 25	5U4G	Inf.	8KΩ	Inf.	¶16.2Ω	Inf.	¶15.8Ω	Inf.	8KΩ	
V 26	10BP4	0Ω	†6KΩ	PIN 10 †100KΩ	PIN 11 25KΩ	PIN 12 .1Ω				

† MEASURED FROM PIN 2 OF V25.
¶ MEASURED FROM PIN 7 OF V20.

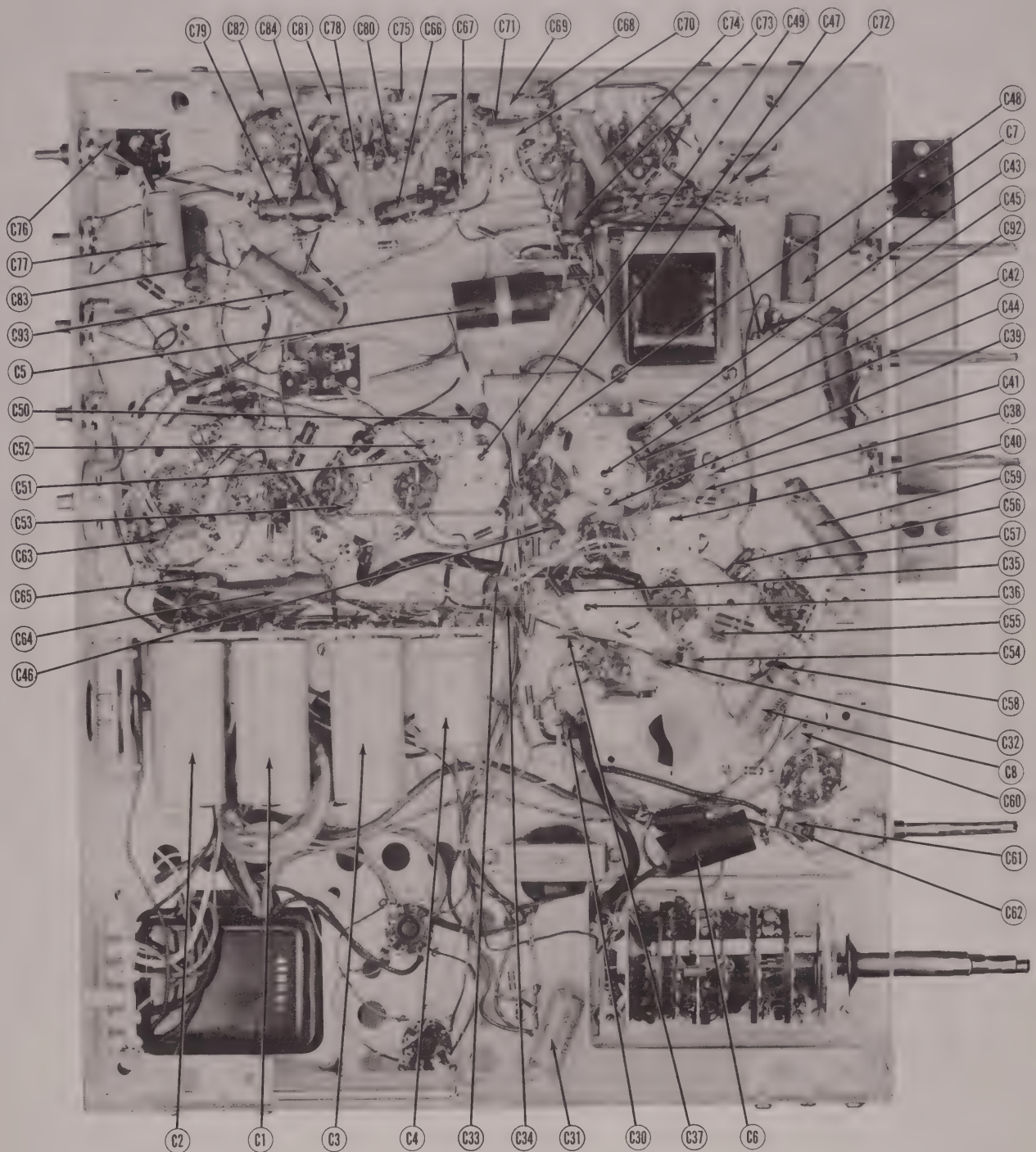
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



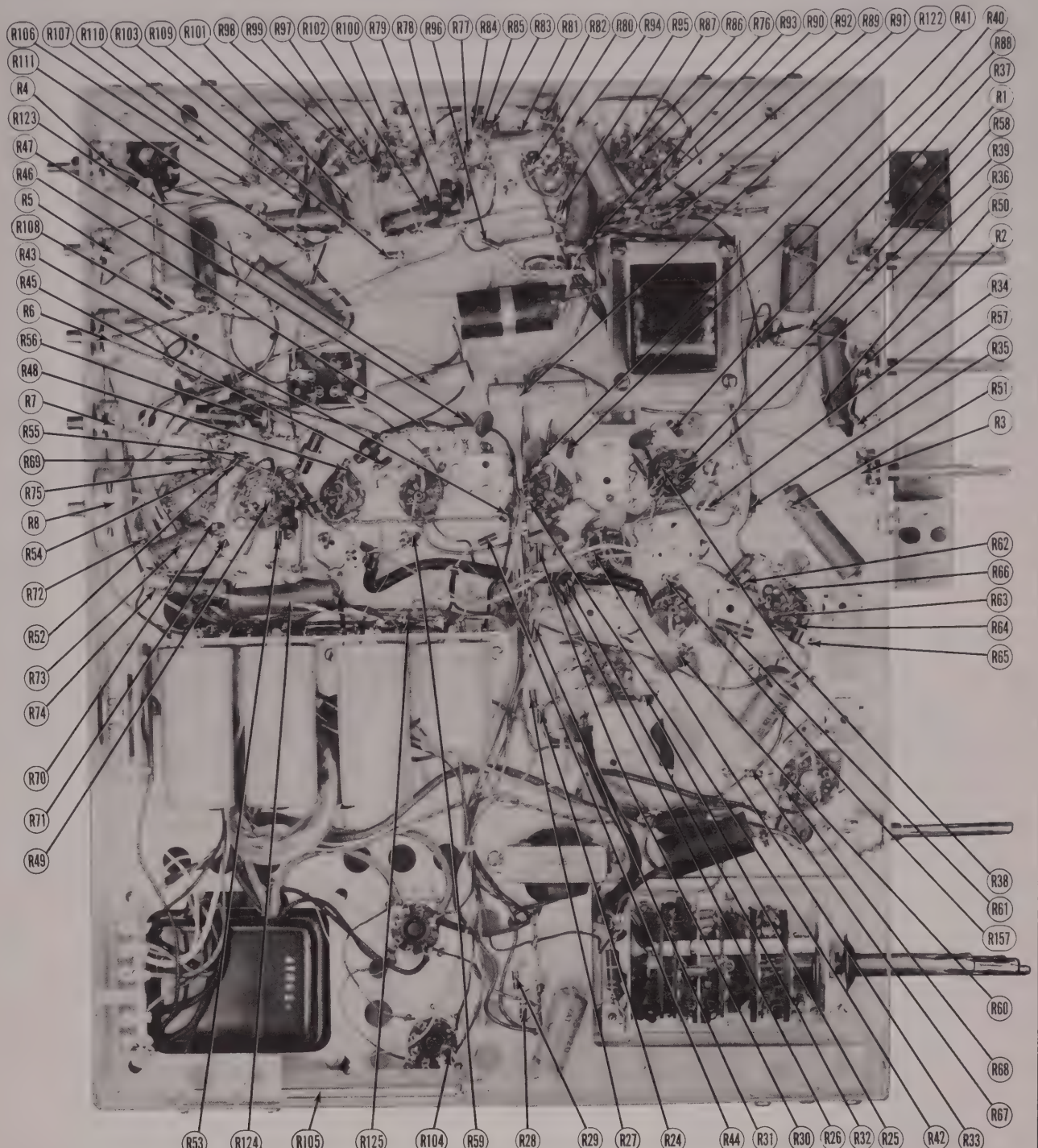
RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE

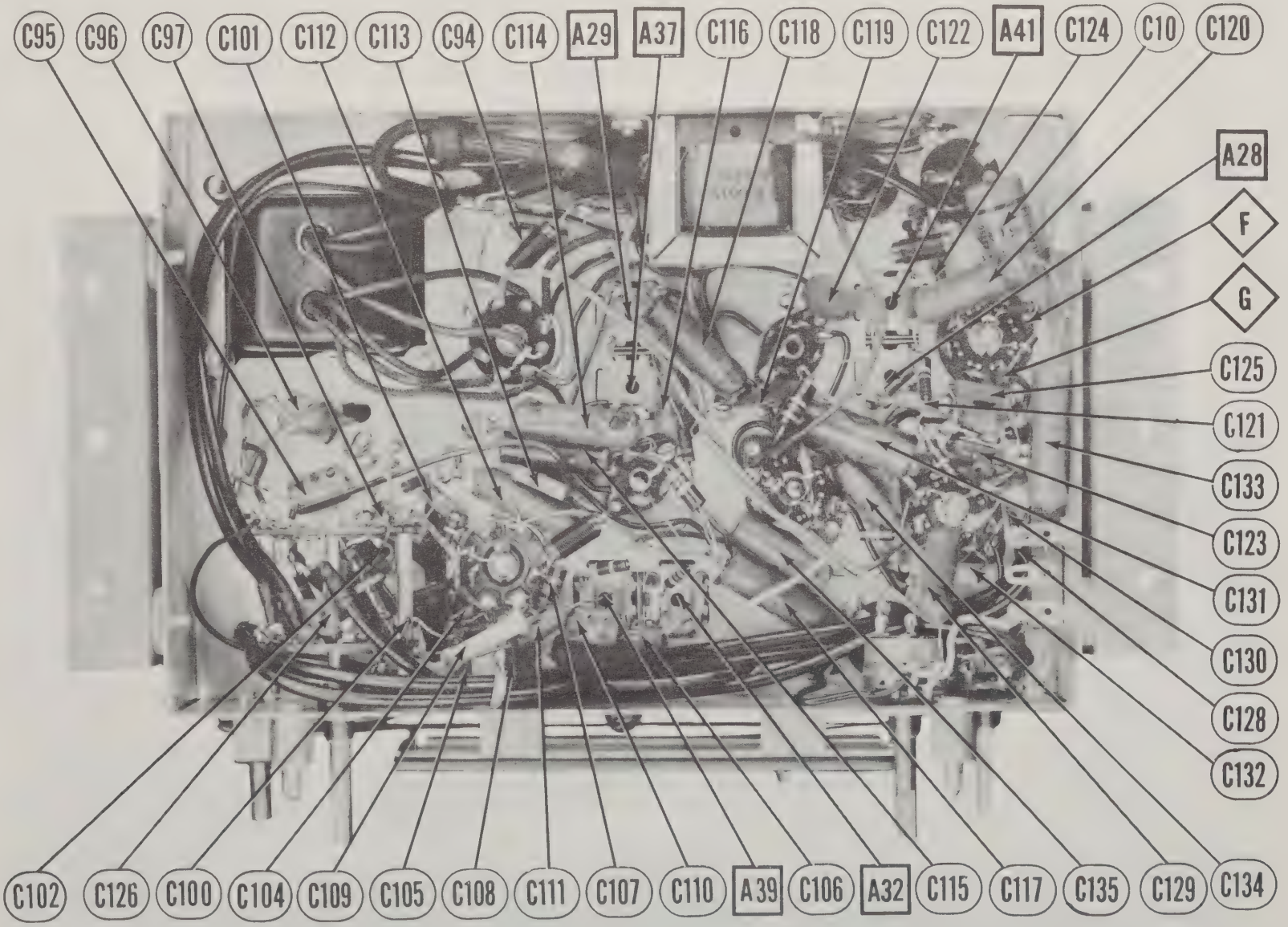


TV CHASSIS BOTTOM VIEW–CAPACITOR IDENTIFICATION

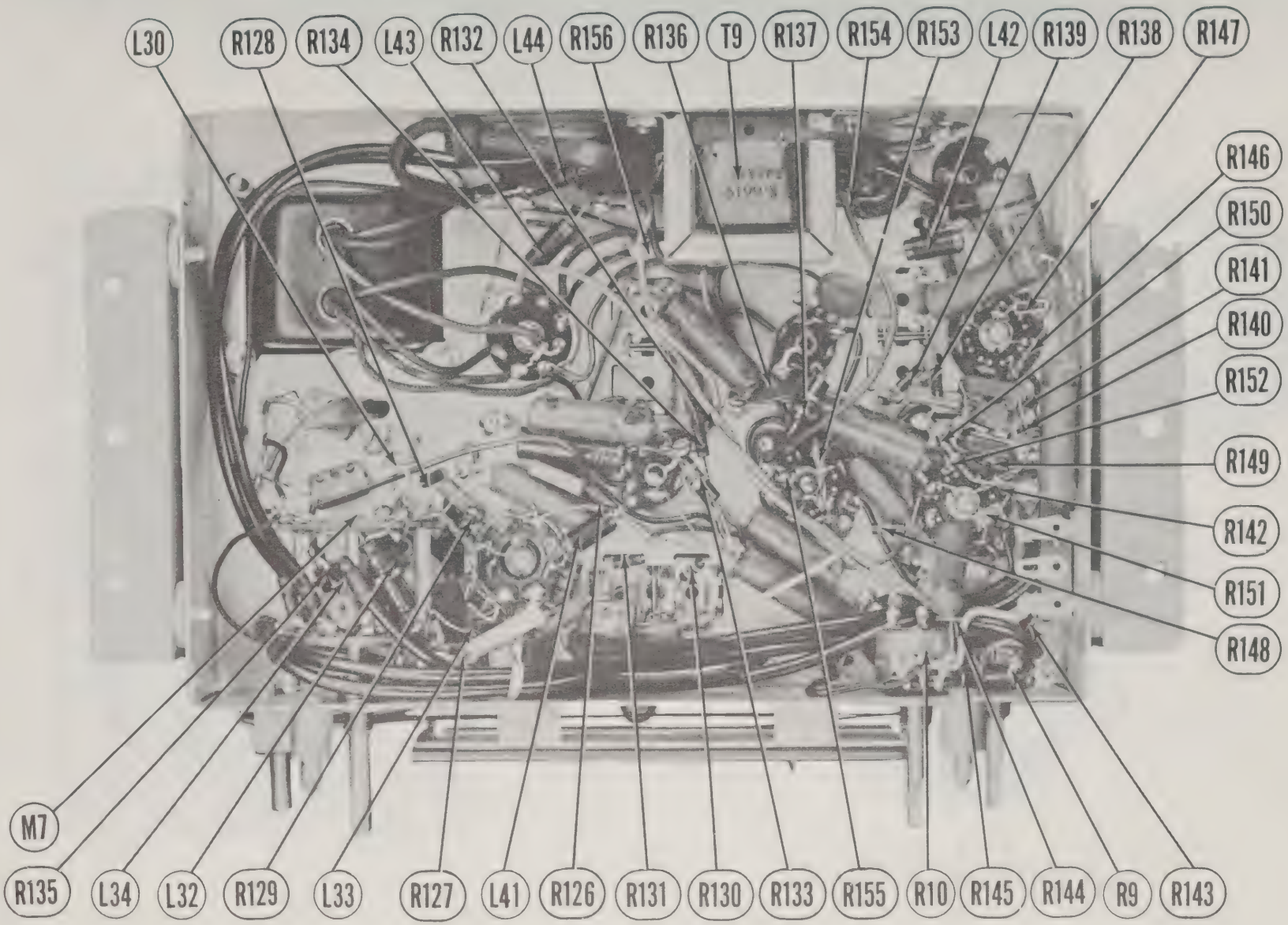


TV CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

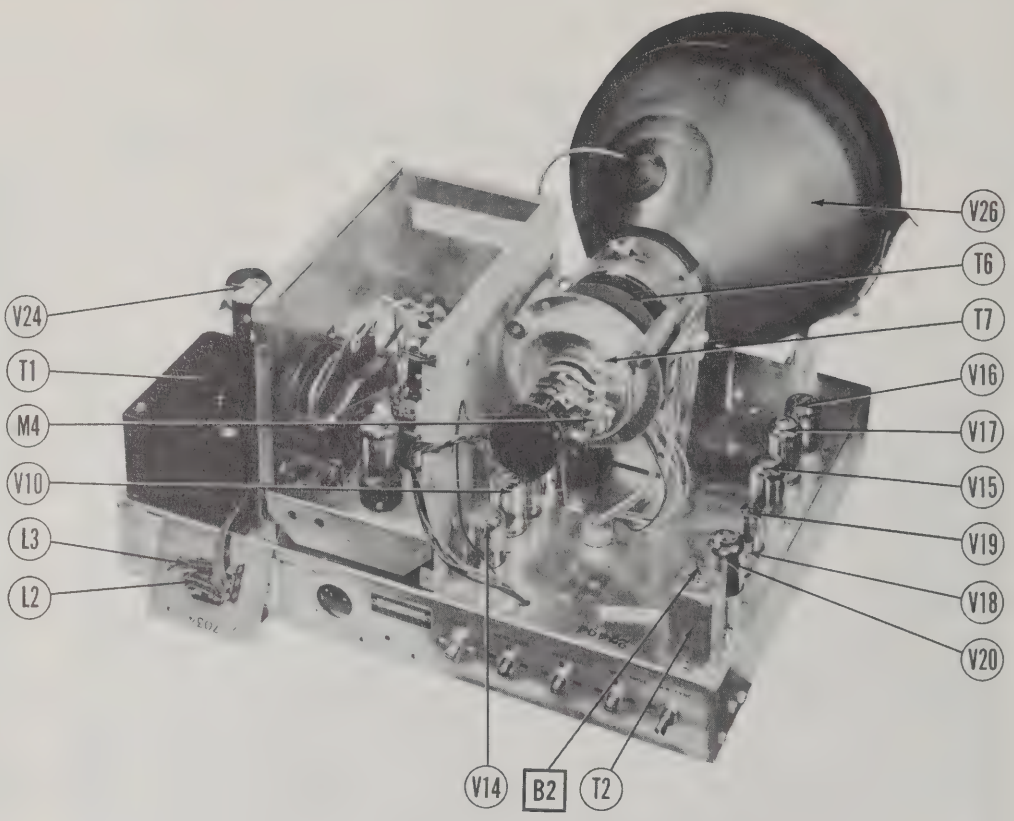
RADIO CHASSIS-TOP VIEW



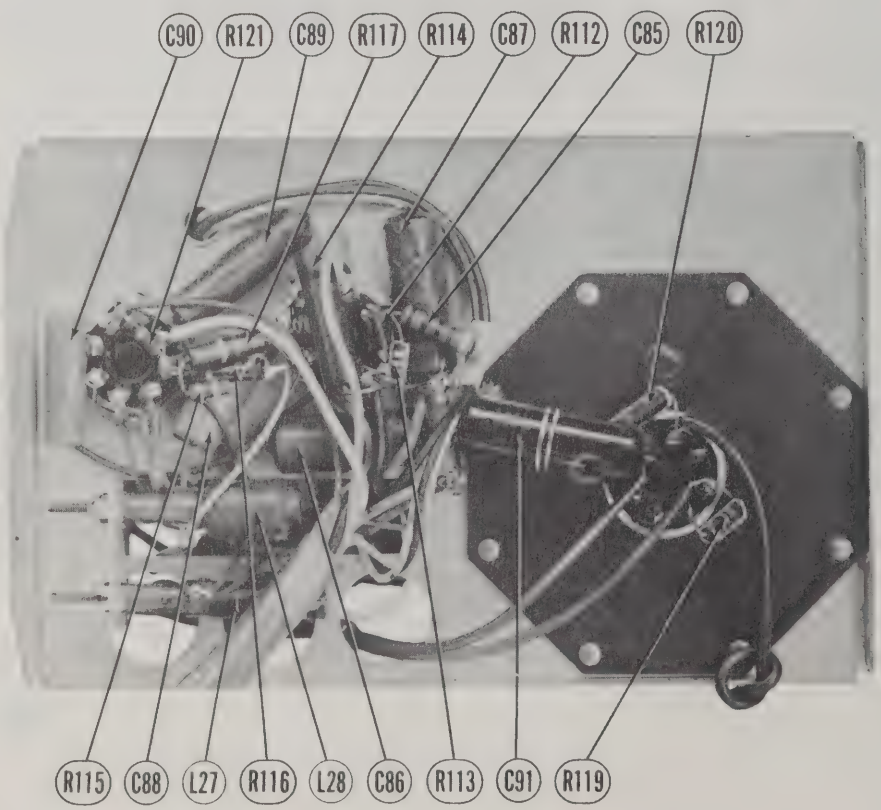
RADIO CHASSIS-BOTTOM VIEW-CAPACITOR IDENTIFICATION



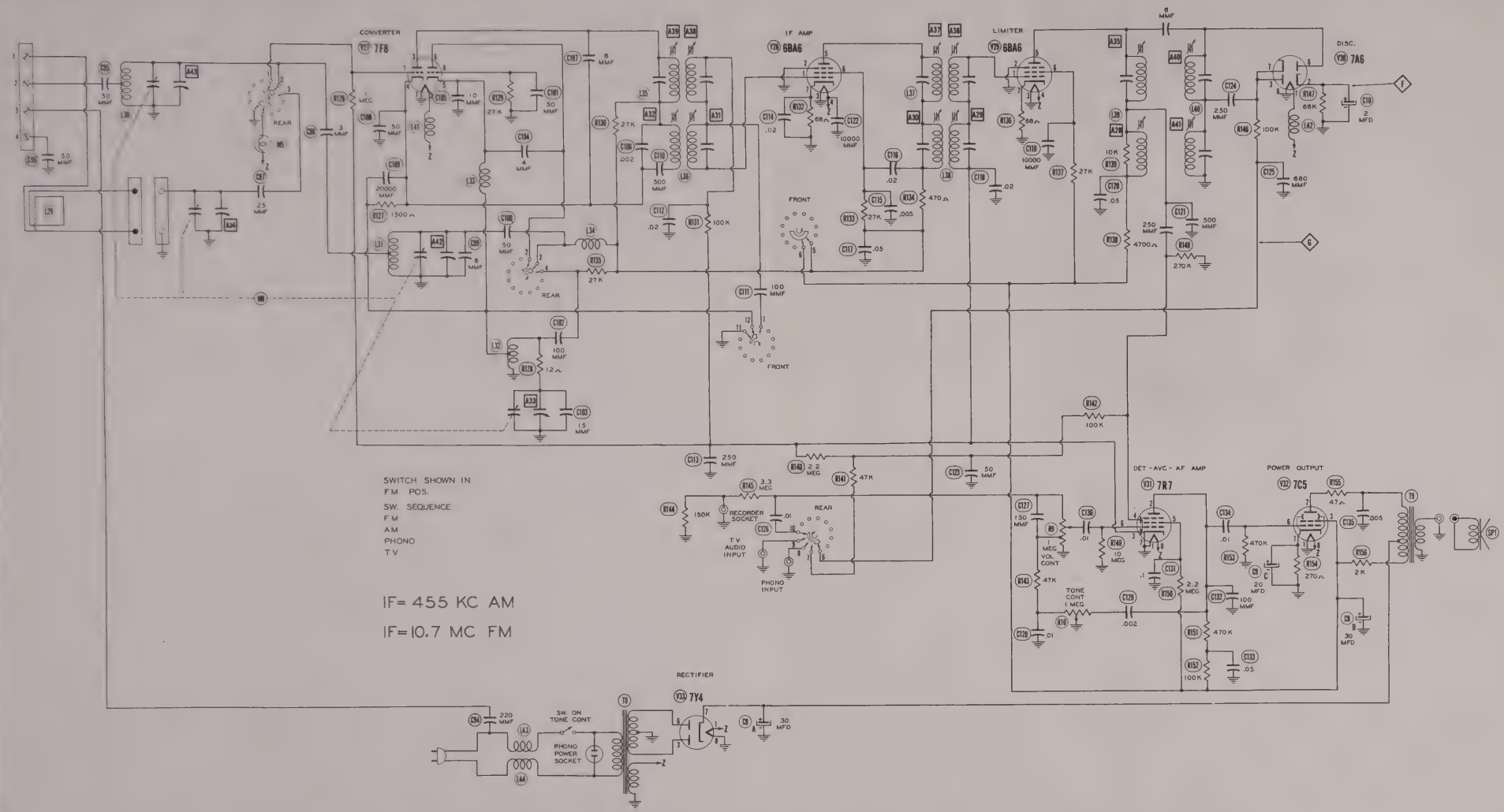
RADIO CHASSIS - BOTTOM VIEW - RESISTOR IDENTIFICATION



CHASSIS-TOP VIEW



HIGH VOLTAGE SUPPLY-BOTTOM VIEW



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V27	7F8	0V.	6.3VAC	140VDC	3.4VDC	0V.	115VDC	0V.	-4.2VDC
† V27	7F8	0V	6.3VAC	90VDC	5.4VDC	0V.	180VDC	0V.	-4VDC
V28	6BA6	-.4VDC	0V.	0V.	6.3VAC	200VDC	90VDC	.9VDC	
V29	6BA6	-.4VDC	0V.	0V.	6.3VAC	185VDC	112VDC	.9VDC	
† V30	7A6	6.3VAC	1.2VDC	6VDC	.4VDC	0V.	0V.	.6VDC	0V.
V31	7R7	0V	46VDC	-.5VDC	-.5VDC	19VDC	-.4VDC	0V.	6.3VAC
V32	7C5	0V.	245VDC	200VDC	245VDC	200VDC	.2VDC	0.2VDC	6.3VAC
V33	7Y4	6.3VAC	0V.	250VAC	0V.	0V.	250VAC	280VDC	0V.

† TAKEN IN "FM" POSITION.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V27	7F8	3.5 Meg.	.1Ω	#29KΩ	1.5KΩ	.2Ω	#29KΩ	0Ω	27KΩ
# V27	7F8	0Ω	.1Ω	#29KΩ	1.5KΩ	.2Ω	#2KΩ	0Ω	27KΩ
V28	6BA6	2.6 Meg.	0Ω	0Ω	.1Ω	#2.5KΩ	#29KΩ	68Ω	
V29	6BA6	2.5 Meg.	0Ω	0Ω	.1Ω	#7KΩ	#28KΩ	68Ω	
V30	7A6	1Ω	58KΩ	Inf.	Inf.	0Ω	3Ω	Inf.	0Ω
V31	7R7	0Ω	#570KΩ	3.5 Meg.	270KΩ	#2.2 Meg.	10 Meg.	0Ω	.1Ω
V32	7C5	0Ω	#700Ω	#2KΩ	#650Ω	#2KΩ	470KΩ	270Ω	.1Ω
V33	7Y4	1Ω	0Ω	130Ω	Inf.	Inf.	120Ω	100KΩ	0Ω

MEASURED FROM PIN 7 OF V33.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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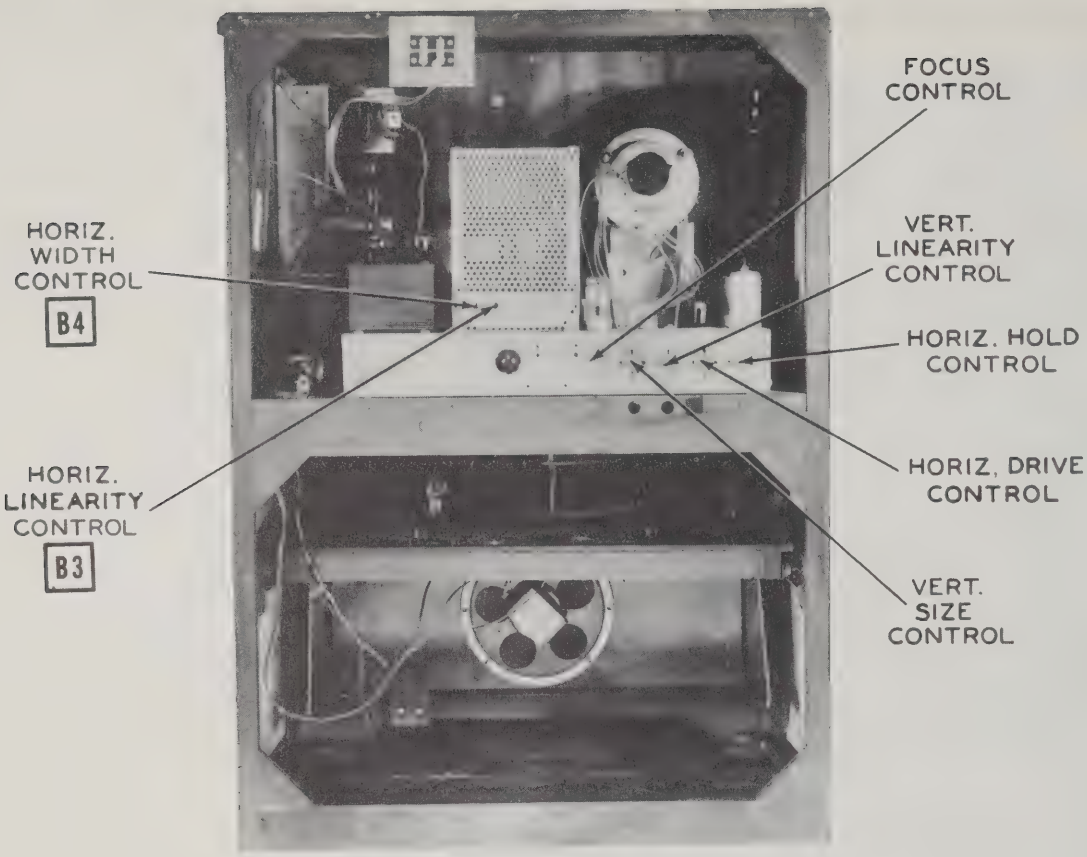
RADIO SCHEMATIC



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

CHECK OF HORIZONTAL OSCILLATOR ALIGNMENT

Turn the horizontal hold control (on the rear panel) to the extreme counterclockwise position. The picture should remain in horizontal sync. Momentarily remove the signal by turning the channel selector switch to another and then back to the original channel. Normally the picture will pull into sync. Turn the horizontal hold control to the extreme clockwise position. The picture should remain in synchronization. Momemtarily remove the signal as noted before. The picture should normally pull into sync.
If the receiver passes the above checks and the picture is normal and stable, the horizontal oscillator is properly aligned.

ALIGNMENT OF HORIZONTAL OSCILLATOR

If in the above check the receiver failed to hold sync with the hold control at either extreme or failed to pull into sync after momentory removals of the signal, make the adjustments under "Slight Retouching Adjustments." If, after making these retouching adjustments, the receiver fails to pass the above checks or if the horizontal oscillator is completely out of adjustment, then make the adjustments under "Complete Realignment."

SLIGHT RETOUCHING ADJUSTMENTS

Tune in a television station and adjust the fine tuning control for best sound quality. Sync the picture and adjust the contrast control for normal contrast. Turn the horizontal hold control to the extreme position in which the oscillator fails to hold or to pull in. Turn the frequency adjustment B2 on the top of horizontal discriminator transformer until the oscillator pulls into sync. Check hold and pull-in for the both extreme positions of the hold control.

COMPLETE REALIGNMENT

Check to make sure the threaded core adjusting screw in the ringing coil (L26) projects 11/16 in. above the coil.
Tune in a television station and adjust the fine tuning control for best sound quality. Turn the frequency adjustment B2 until the picture is synchronized. (If the picture is not synchronized vertically, adjust the vertical hold.) Adjust the picture controls for normal picture.
Turn the phase adjustment screw B1 until the blanking bar, which may appear in the picture, moves to the right and off the raster. The range of this adjustment is such that it is possible to hit an unstable condition (ripples in the raster). The screw must be turned clockwise from the unstable position.
Turn the horizontal hold control on the rear panel to the extreme counterclockwise position. Turn frequency adjustment screw clockwise until the picture falls out of sync. Then turn it slowly counterclockwise to the point where the picture falls in sync again.
Readjust B1 so that the left side of the picture is close to the left side of the raster, but does not begin to fold over.
Turn horizontal hold to extreme clockwise position. The right side of the picture should be close to the right side of the raster, but should not begin to fold over. If it does, readjust B1.
Momentarily remove the signal as noted above. When the signal is restored, the picture should fall in sync. If it doesn't, turn the B2 counterclockwise until the picture falls in sync. Turn horizontal hold to extreme counterclockwise position. Remove the signal momentarily as noted above. When the signal is restored, the picture should fall in sync.
NOTE: If the picture does not pull in sync after momentary removals of signal in both extreme positions of horizontal hold, the pull-in range may be inadequate, through not necessarily. A pull-in through 3/4 of the hold control range may still be satisfactory.
There is a difference between the pull-in range and hold-in range of frequencies. Once in sync, the circuit will hold 50% to 100% more variation in frequency than it can pull-in. The range of the horizontal hold control is only approximately equal to the pull-in range. Considerable variation may be found due to variations in the cut-off characteristic of the horizontal oscillator control tubes.

HORIZONTAL LINEARITY ADJUSTMENTS

Turn the horizontal drive control clockwise as far as possible without crowding the right side of the picture. Adjust the horizontal linearity slug (B3) until the picture is symmetrical from left to right. Readjustment of the horizontal drive control may be necessary to obtain optimum results.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: SILVERTONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp.	6BH6	6BH6	7CM	
V2	Mixer	6AG5	6AG5	7BD	
V3A	Oscillator	6AB4	6AB4	6CE	
B	Oscillator	6C4	6C4	6BG	
V4	1st Video IF	6BA6	6BA6	7BK	
V5	2nd Video IF	6BA6	6BA6	7BK	
V6	3rd Video IF	6AU6	6AU6	7BK	
V7	4th Video IF	6AU6	6AU6	7BK	
V8	Video Det. -Sync. Clipper	6AL5	6AL5	6BT	
V9	Video Amp.	6AU6	6AU6	7BK	
V10	Video Output	7B5	7B5	6AE	
V11	Sound IF Amp.	6AU6	6AU6	7BK	
V12	Limiter	6AU6	6AU6	7BK	
V13	Disc.	7A6	7A6	7AJ	
V14	1st Sync. Sep. -AGC Rectifier	7F7	7F7	8AC	
V15	Sync. Amp. -2nd Sync. Sep.	7AF7	7AF7	8AC	
V16	Vert. Osc. -Vert. Disch. -AGC Amp.	7AF7	7AF7	8AC	
V17	Vert. Output	7B5	7B5	6AE	
V18	Hor. Sync. Disc.	6AL5	6AL5	6BT	
V19	Hor. AFC	6AU6	6AU6	7BK	
V20	Hor. Osc. -Hor. Disch.	7AF7	7AF7	8AC	
V21	Hor. Output	6BG6G	6BG6G	5BT	
V22	Damper	6W4GT	6W4GT	4CG	
V23	HV Rectifier	1B3GT	1B3GT	3C	
V24	LV Rectifier	5U4G	5U4G	5T	
V25	LV Rectifier	5U4G	5U4G	5T	
V26A	Picture Tube	10BP4	10BP4	12D	Used in model 9133
B	Picture Tube	12LP4	12LP4	12D	Used in model 9134
V27	Converter	7F8	7F8	8BW	
V28	IF Amp.	6BA6	6BA6	7BK	
V29	Limiter	6BA6	6BA6	7BK	
V30	Disc.	7A6	7A6	7AJ	
V31	Det. -AVC-AF Amp.	7R7	7R7	8AE	
V32	Power Output	7C5	7C5	6AA	
V33	Rectifier	7Y4	7Y4	5AB	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA: SILVERTONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	500	R70578	AF88K			TVL-20	● Filter
B	40	400						▲ Filter
C2A	40	500	R70580	AF88K			TVL-20	● Filter
B	40	500						▲ Filter
C3A	60	500	R70579	AF12K16D				● Filter
B	80	150						▲ Filter
C4A	10	475	R70575	AF22X10C				● Vert. Output Decoupling
B	10	475						■ Decoupling
C	50	100						▲ Bias Filter
C5	100	50	R70576	PRS50/100			TVA-17	Vert. Output Cathode Bypass
C6	10	450	R70581	PRS450/10			TVA-21	Decoupling
C7	10	150	R70577	PRS150/10			UT-101	AGC Filter
C8	2	50	R64915	PRS150/4			TVA-12	Stabilizing
C9A	30	350	R67029	AF64H4A			EL-323	■ Filter
B	30	300						▲ Filter
C	20	25						Output Cathode Bypass
C10	2	50	R64915	PRS150/4			TVA-12	Stabilizing Cap.
C11	680				D6-681	GP2K-680		RF Cathode Bypass
C12	680				D6-681	GP2K-680		RF Coupling
C13	680				D6-681	GP2K-680		AGC Filter
C14	680				D6-681	GP2K-680		RF Screen Bypass
C15	680				D6-681	GP2K-680		Filament Bypass
C16	.68				D2-.68			RF Coupling
C17	.5				D2-.5			RF Coupling
C18	1.5				D2-1.5	NPOK-1.5		RF Coupling
C19	25				D6-250	GP1K-25		RF Coupling
C20	680				D6-681	GP2K-680		RF Plate Decoupling
C21	5000				D6-502	811-005		Conv. Screen Bypass
C22	680				D6-681	GP2K-680		Decoupling
C23	1.5				D2-1.5	NPOK-1.5		Osc. Coupling
C24	680				D6-681	GP2K-680		Osc. Feedback
C25	3					N750K-3		Fixed Trimmer
C26	680				D6-681	GP2K-680		Osc. Plate Decoupling
C27	680				D6-681	GP2K-680		Osc. Filament Bypass
C28	1500				D6-152	GP2L-0015		Conv. Plate Decoupling
C29	500			GP500M	D6-501	GP2K-500	1FM-35	IF Coupling
C30	5000			BPD-5	D6-502	811-005	29C1	AGC Filter
C31	.5	120		P288-5			TC-5	AGC Filter
C32	5000			BPD-5	D6-502	811-005	29C1	1st V. IF Decoupling
C33	5000			BPD-5	D6-502	811-005	29C1	1st V. IF Decoupling
C34	5000			BPD-5	D6-502	811-005	29C1	AGC Filter
C35	5000			BPD-5	D6-502	811-005	29C1	AGC Filter
C36	250			GP250M	D6-251	GP2K-250	1FM-325	IF Coupling
C37	5000			BPD-5	D6-502	811-005	29C1	1st V. IF Fil. Bypass
C38	5000			BPD-5	D6-502	811-005	29C1	2nd V. IF Decoupling
C39	5000			BPD-5	D6-502	811-005	29C1	2nd V. IF Decoupling
C40	250			GP250M	D6-251	GP2K-250	1FM-325	IF Coupling
C41	5000			BPD-5	D6-502	811-005	29C1	RF Bypass
C42	5000			BPD-5	D6-502	811-005	29C1	3rd V. IF Cathode Bypass
C43	5000			BPD-5	D6-502	811-005	29C1	3rd V. IF Screen Bypass
C44	5000			BPD-5	D6-502	811-005	29C1	3rd V. IF Decoupling
C45	250			GP250M	D6-251	GP2K-250	1FM-325	IF Coupling
C46	5000			BPD-5	D6-502	811-005	29C1	2nd V. IF Decoupling
C47	5000			BPD-5	D6-502	811-005	29C1	2nd V. IF Screen Bypass
C48	5000			BPD-5	D6-502	811-005	29C1	2nd V. IF Cath. Bypass
C49	250			GP250M	D6-251	GP2K-250	1FM-325	IF Coupling

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No	RATING CAP	RATING VOLT	REPLACEMENT DATA SILVERTONE PART No	AEROVOX PART No	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C50	5000			BPD-5	D6-502	811-005	29C1	RF Bypass
C51	3.3			CN3.3CNPO	D2-3.3	NPOK-3.3		Fixed Trimmer
C52	10			GP10M	D6-100	GP1K-10	MS-41	V. Diode Filter
C53	4.7			CN4.7DNPO	D2-4.7	NPOK-4.7	MS-55	S. IF Coupling
C54	5000			BPD-5	D6-502	811-005	29C1	1st S. IF Cathode Bypass
C55	5000			BPD-5	D6-502	811-005	29C1	1st S. IF Decoupling
C56	50	500		[illegible]	D6-500	GP1K-50	1FM-45	2nd S. IF Grid Filter
C57	5000			BPD-5	D6-502	811-005	29C1	2nd S. IF Screen Bypass
C58	5000			BPD-5	D6-502	811-005	29C1	RF Bypass
C59	2	400		P488-22			TC-2	2nd S. IF Plate Decoupling
C60	250	500		1468-00025	D6-251	GP2K-250	1FM-325	Diode Load Cap.
C61	680	500		1468-00075	D6-681	GP2K-680	1FM-37	De-emphasis
C62	5000			BPD-5	D6-502	811-005	29C1	Ratio Det. F1l. Bypass
C63	.01	400		P488-01	D6-103	811-01	TM-11	1st Sync. Sep. Cath. Bypass
C64	.2	400		P488-22			TC-2	AGC Rect. Cath. Bypass
C65	.001	600		[illegible]	D6-102	GP2L-001	TM-21	AGC Coupling
C66	.05	400		P488-05			TM 15	Sync. Coupling
C67	100			GP100M	D6-101	GP1K-100	1FM-31	Sync. Coupling
C68	390	500		[illegible]	D6-391	GP2K-390	1FM-34	2nd Sync. Sep. Cath. Bypass
C69	.002	600		[illegible]	D6-202	GP2M-002	TM-22	Integrator Net.
C70	.005	600		P688-005	D6-502	811-005	TM-25	Integrator Net.
C71	.005	600		P688-005	D6-502	811-005	TM-25	Integrator Net.
C72	5000	500		1467-005	D6-502	811-005	1FM-25	Vert. Osc. Grid Cap.
C73	1	400		P488-1			TM-1	Vert. Discharge
C74	1	400		P488-1			TM-1	Vert. Sweep Coupling
C75	100			GP100M	D6-101	GP1K-100	1FM-31	Hor. Sync. Coupling
C76	.005	600		[illegible]	D6-502	811-005	TM-25	Fixed Trimmer
C77	.015	600	R67119	P688-015				Fixed Trimmer
C78	.004	400		P688-004	D6-472	GP2M-0047	TM-24	AFC Filter
C79	.05	400		P488-05			TM-15	AFC Filter
C80	100			GP100M	D6-101	GP1K-100	1FM-31	Hor. AFC Feedback
C81	.004	400		[illegible]			TM-24	Hor. Osc. Grid Cap.
C82	.01	600		[illegible]	D6-103	811-01	TM-11	Hor. Sweep Coupling
C83	.05	400		P488-05			TM-15	Decoupling
C84	680	500			D6-681	GP2K-680	1FM-37	Hor. Discharge
C85	1000			GP1000M	D6-102	GP2L-001	1FM-21	Hor. Sweep Coupling
C86	1	400		P488-1			TM-1	Hor. Output Screen Bypass
C87	1	400		P488-1			TM-1	Hor. Output Cath. Bypass
C88	.03	600		P688-03			TM-13	Damper Filter
C89	.05	400		P488-05			TM-15	Damper Filter
C90	.005	600		P688-005	D6-502		TM-25	Acc. Anode Bypass
C91	.0005	9900	R70154	10084-0005			TVM-351	HV Filter
C92	.2	400		P488-22			TC-2	Pic. Tube Cath. Dec.
C93	.2	400		P488-22			TC-2	Hor. Sweep Coupling
C94	200	500		1468-0002	D6-201	GP2K-200	1FM-32	FM Ant. Coupling
C95	50	500		1468-00005	D6-500	GP1K-50	1FM-45	FM Ant. Coupling
C96	50	500		1468-00005	D6 500	GP1K 50	1FM-45	FM Ant. Coupling
C97	25	500		1468-00025	D6 250	GP1K-25	MS-425	RF Coupling
C98	3			CN3CNPO	D2-3.3	NPOK-3		Osc. Coupling
C99	6			CN6DN470		N470K-6		Fixed Trimmer
C100	50	500		1468-00005	D6-500	GP1K-50	1FM-45	Osc. Feedback
C101	50	500		1468-00005	D6-500	GP1K-50	1FM-45	Osc. Feedback
C102	100	500		1468-0001	D6-101	GP1K-100	1FM-31	Osc. Feedback
C103	15			CN15JN750	DN-15	N750K-15	MS-415	Fixed Trimmer
C104	4			CN4CNPO		NPOK-4		Osc. Feedback
C105	10	500		1468-00001	D6-100	GP1K-10	MS-41	Osc. Cathode Bypass
C106	.002	600		P688-002	D6-202	GP2M-002	TM-22	Conv. Plate Decoupling
C107	6			CN6DNPO		NPOK-6		Fixed Trimmer
C108	50	500		1468-00005	D6-500	GP1K-50	1FM-45	Conv. Cathode Bypass
C109	20000			P488-02			TM-12	Conv. Cathode Bypass *
C110	500	500		1469-0005	D6-501	GP2K-500	MS-35	Fixed Trimmer
C111	100	500		1468-0001	D6-101	GP1K-100	1FM-31	AVC Filter
C112	.02	200		P488-02			TM-12	AVC Filter
C113	250	500		1468-00025	D6-251	GP2K-250	1FM 325	AVC Filter
C114	.02	200		P488-02			TM-12	1st IF Cathode Bypass
C115	.005	400		P688-005	D6 502	811-005	TM-25	1st IF Screen Bypass
C116	.02	400		P488-02			TM-12	1st IF Plate Decoupling
C117	.05	400		P488-05			TM-15	RF Bypass
C118	.02	200		P488-02			TM-12	AVC Filter
C119	10000			BPD-10	D6-101	811-01	36C1	2nd IF Screen Bypass
C120	.05	400		P488-05			TM-15	2nd IF Plate Decoupling
C121	500	500		1469-0005	D6-501	GP2K-500	MS-35	Fixed Trimmer
C122	10000			BPD-10	D6-103	811-01	36C1	2nd IF Filament Bypass
C123	50	500		1468-00005	D6-500	GP1K-50	1FM-45	Diode RF Filter
C124	250	500		1468-00025	D6-251	GP2K-250	1FM-325	Diode Load Cap.
C125	680	500			D6-681	GP2K-680	1FM-37	De-emphasis
C126	.01	500		P688-01	D6-103	811-01	TM-11	Audio Coupling
C127	150	500		1468-00015	D6-151	GP2K-150	1FM-315	Tone Compensation
C128	.01	400		P488-01	D6-103	811-01	TM-11	Tone Compensation
C129	.002	600		P688-002	D6-202	GP2M-002	TM-22	Tone Compensation
C130	.01	400		P488-01	D6-103	811-01	TM-11	Audio Coupling
C131	.1	200		P288-1			TM-1	AF Amp. Screen Bypass
C132	100	500		1468-0001	D6-101	GP1K-100	1FM-31	AF Amp. Plate Bypass
C133	.05	400		P488-05			TM-15	AF Amp. Plate Decoupling
C134	.01	400		P488-01	D6-103	811-01	TM-11	Audio Coupling
C135	.005	600		P688-005	D6-502	811-005	TM-25	Output Plate Bypass

* Items C109 and R127 are combined into one unit, obtainable under MFGR'S Part No. R67575.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Silvertone PART No.	IRC PART No	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1	1 Meg.		R70537	Q11-137	M-61-S	B-69	Vert. hold control
R2	50KΩ		R70538	Q11-123	M-44-S	B 31	Brightness control
R3	4000Ω		R70536		M 80-S		Contrast control
R4	50KΩ		R70539	Q11-123	M-44-S	B-31	Horiz. hold control
R5A	1 Meg		R65448	Q11-137	AM-61-S	AN-69	Horiz. drive control
B	Shaft		Not Req.	RQ	KSS-3 *	AK-1	Attach to R5A per instructions
R6A	5000Ω		R67085	Q11-114	AM-19-S	AN-10	Vert. linearity control
B	Shaft		Not Req.	RQ	KSS-3 *	AK-1	Attach to R6A per instructions
R7A	2.5 Meg.		R63869	Q11-239	AM-84-S	AN-83	Vert. size control
B	Shaft		Not Req.	RQ	KSS-3 *	AK-1	Attach to R7A per instructions
R8	600Ω	4	R65450		10-600 *		Focus control-Wire Wound
R9	1 Meg.		R67682	Q13-137X		BT-72	Volume control, tapped ② 200KΩ
R10A	1 Meg.		R67248	Q11-137	M-61-S	B-69-S	Tone control
B	Switch		Not Req.	76-1	SW-A	Not Req.	Attach to R10A per instructions

* File slot in shaft to duplicate original.

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA SILVERTONE PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ARE ± 10% UNLESS OTHERWISE STATED
R11	150Ω 20%	1			RF Cathode
R12	22KΩ 20%	1		BTS-22K	RF Grid
R13	10KΩ 20%	1		BTS-10K	RF Screen
R14	1000Ω 20%	1		BTS-1000	RF Decoupling
R15	4700Ω 20%	1		BTS-4700	Mixer Grid Coil Shunt
R16	1 Meg. 20%	1			Mixer Grid
R17	47KΩ 20%	1			Mixer Screen
R18	1000Ω 20%	1		BTS-1000	Mixer Plate Decoupling
R19	22KΩ 20%	1		BTS-22K	Osc. Grid
R20	470Ω	1			Osc. Cathode
R21	68000Ω 20%	1			Osc. Plate
R22	680Ω	1		BTA-680	Decoupling
R23	2700Ω	1		BTA-2700	Decoupling
R24	220Ω	1			1st Video IF Grid
R25	82Ω	1			1st Video IF Cathode
R26	1000Ω 20%	1		BTS-1000	1st Video IF Decoupling
R27	1000Ω 20%	1		BTS-1000	AGC Network
R28	100KΩ	1		BTS-100K	AGC Network
R29	6.8 Meg.	1		BTS-6.8 Meg.	Voltage Divider
R30	1000Ω 20%	1			Decoupling
R31	1000Ω 20%	1		BTS-1000	AGC Network
R32	3900Ω	1			2nd Video IF Grid
R33	82Ω	1			2nd Video IF Cathode
R34	1000Ω 20%	1		BTS-1000	2nd Video IF Decoupling
R35	1000Ω 20%	1			Decoupling
R36	22KΩ	1			3rd Video IF Grid
R37	120Ω	1			3rd Video IF Cathode
R38	27KΩ	1			3rd Video IF Screen
R39	1000Ω 20%	1		BTS-1000	3rd Video IF Decoupling
R40	22KΩ	1			4th Video IF Grid
R41	120Ω	1			4th Video IF Cathode
R42	27KΩ	1			4th Video IF Screen
R43	8200Ω	1			4th Video IF Plate
R44	1000Ω 20%	1		BTS-1000	4th Video IF Decoupling
R45	22KΩ 5%	1		BTS-22K-5%	Peaking Coil Shunt
R46	3900Ω 5%	1		BTS-3900-5%	Video Det. Diode Load
R47	10Ω	1			Video Det. Diode Load
R48	270Ω 5%	1			Video Amp. Cathode
R49	4700Ω 5%	1		BTS-4700-5%	Video Amp. Plate
R50	100Ω	1			Video Output Grid
R51	3300Ω 5%	1		BTS-3300-5%	Voltage Divider
R52	10KΩ 20%	1		BTS-10K	1st Sync. Sep. Grid
R53	120Ω 5%	1			Video Output Cathode
R54	15KΩ 5%	1		BTS-15K-5%	Peaking Coil Shunt
R55	22KΩ 5%	1		BTS-22K-5%	Peaking Coil Shunt
R56	4700Ω 5%	2		BT-2-4700-5%	Video Output Plate
R57	33KΩ	1		BTS-33K	Voltage Divider
R58	33KΩ	1		BTS-33K	Voltage Divider
R59	47KΩ 20%	1			Sound IF Grid
R60	120Ω	1			Sound IF Cathode
R61	18KΩ 20%	1			Sound IF Decoupling
R62	47KΩ 20%	1			Limiter Grid
R63	120Ω	1			Limiter Cathode
R64	39KΩ	1			Limiter Screen
R65	100KΩ 20%	1		BTS-100K	Limiter Plate
R66	33KΩ 20%	1		BTS-33K	Voltage Divider
R67	68KΩ	1		BTS-68K	Disc. Diode Load
R68	100KΩ 20%	1		BTS-100K	De emphasis
R69	47KΩ 20%	1		BTS-47K	1st Sync. Sep. Grid
R70	27KΩ	1		BTS-27K	1st Sync. Sep. Plate
R71	27KΩ	1		BTS-27K	1st Sync. Sep. Plate
R72	680KΩ	1		BTS-680K	1st Sync. Sep. Cathode
R73	56KΩ 5%	1		BTS-56K-5%	1st Sync. Sep. Cathode
R74	560KΩ 5%	1		BTS-560K-5%	Voltage Divider
R75	47KΩ	1		BTS-47K	1st Sync. Sep. Plate
R76	1 Meg.	1		BTS-1 Meg.	AGC Amp. Grid
R77	1 Meg. 20%	1		BTS-1 Meg.	Sync. Amp. Grid
R78	330Ω	1		BW-½-330	Sync. Amp. Cathode
R79	22KΩ	1		BTA-22K	Sync. Amp. Plate
R80	3.9 Meg.	1		BTS-3.9 Meg.	2nd Sync. Sep. Grid
R81	2200Ω	1		BTS-2200	2nd Sync. Sep. Cathode
R82	4700Ω	1		BTS-4700	2nd Sync. Sep. Cathode
R83	22KΩ	1		BTS-22K	Integrator
R84	8200Ω	1		BTS-8200	Integrator
R85	8200Ω	1		BTS-8200	Integrator
R86	10KΩ	1		BTS-10K	AGC Amp. Plate
R87	100Ω	1		BW-½-100	Voltage Divider
R88	1.2 Meg.	1		BTS-1.2 Meg.	Vert. Osc. Grid
R89	2.2 Meg.	1		BTS-2.2 Meg.	Voltage Divider
R90	100KΩ	1		BTS-100K	Voltage Divider
R91	220KΩ	1		BTS-220K	Vert. Osc. Plate
R92	22KΩ 20%	1		BTS-22K	Vert. Osc. Transformer Shunt
R93	3900Ω 5%	1		BTS-3900-5%	Vert. Peaking
R94	2.2 Meg. 20%	1		BTS-2.2 Meg.	Vert. Output Grid
R95	2200Ω	1		BTS-2200	Vert. Output Cathode
R96	1000Ω 20%	1		BTS-1000	Vert. Output Decoupling
R97	4.3Ω	1	R67223		Horiz. Sync. Disc. Filament-Wire Wound
R98	470KΩ	1		BTS-470K	Horiz. Sync. Disc. Load
R99	470KΩ	1		BTS-470K	Horiz. Sync. Disc. Load
R100	1 Meg. 20%	1		BTS-1 Meg.	Horiz. Sync. Disc. Load
R101	470KΩ 20%	1		BTS-470K	Horiz. AFC Filter Network
R102	1000Ω 20%	1		BTS-1000	Horiz. AFC Grid
R103	10KΩ	1		BTS-10K	Horiz. AFC Grid
R104	100Ω 5%	1		BW-½-100-5%	Horiz. AFC Cathode
R105A	5600Ω	10	R67104		Voltage Divider-Wire Wound
B	962Ω	10			Filter-Wire Wound
R106	27KΩ	1		BTS-27K	Horiz. Osc. Grid
R107	22KΩ 20%	1		BTS-22K	Horiz. Osc. Transformer Shunt
R108	2200Ω	1		BTA-2200	Horiz. Osc. Plate
R109	2.2 Meg. 20%	1		BTS-2.2 Meg.	Horiz. Discharge Grid
R110	47KΩ 20%	1		BTS-47K	Horiz. Discharge Plate
R111	10KΩ	1		BTS-10K	Horiz. Peaking
R112	100Ω 20%	1			Parasitic Supp.
R113	330KΩ	1		BTS-330K	Horiz. Output Grid
R114	100Ω 20%	2		BW-2-100	Horiz. Output Cathode
R115	39KΩ	1		BTS-39K	Horiz. Output Screen
R116	22KΩ	1		BTA-2-22K	Horiz. Output Screen
R117	33KΩ	1		BTA-33K	Horiz. Output Screen

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA SILVERTONE PART No.	IRC PART No.	IDENTIFICATION CODES
R118A	176Ω	5			Bias Network-Wire Wound
B	65Ω	5	R65789		Bias Network-Wire Wound
C	418Ω	5			Bias Network-Wire Wound
R119	3.6Ω	½	R67236		HV Rect. Filament-Wire Wound
R120	1 Meg. 20%	1			HV Filter
R121	100KΩ	½		BTS-100K	Acc. Anode Decoupling
R122	4000Ω	10	R70523	AB-4000	Damper Filter-Wire Wound
R123	3500Ω	10	R67190	AB-3500	Damper Filter-Wire Wound
R124	220Ω	5	R67024	AB-225	Focus Coil Shunt-Wire Wound
R125	100KΩ	½		BTS-100K	Decoupling
R126	1 Meg. 20%	½		BTS-1 Meg.	Conv. Grid
R127	1500Ω 20%	½	#	BTS-1500	Conv. Cathode
R128	12Ω	½			Parasitic Supp.
R129	27KΩ	½		BTS-27K	Osc. Grid
R130	27KΩ	½		BTS-27K	Conv. Plate Decoupling
R131	100KΩ 20%	½		BTS-100K	AVC Network
R132	68Ω 20%	½			1st IF Cathode
R133	27KΩ	1		BTA-27K	1st IF Screen
R134	470Ω 20%	½		BTS-470	1st IF Plate Decoupling
R135	27KΩ	½		BTS-27K	Osc. Plate Decoupling
R136	68Ω 20%	½			Limiter Cathode
R137	27KΩ	1		BTA-27K	Limiter Screen
R138	4700Ω 20%	½		BTS-4700	Limiter Plate Decoupling
R139	10KΩ 20%	½		BTS-10K	3rd AM IF Transformer Shunt
R140	2.2 Meg. 20%	½		BTS-2.2 Meg.	AVC Network
R141	47KΩ 20%	½		BTS-47K	Diode Filter
R142	100KΩ 20%	½		BTS-100K	AVC Network
R143	47KΩ 20%	½		BTS-47K	Tone Compensation
R144	150KΩ 20%	½		BTS-150K	Wire Recorder Input Load
R145	3.3 Meg. 20%	½		BTS-3.3 Meg.	Tone Compensation
R146	100KΩ 20%	½		BTS-100K	De-emphasis
R147	68KΩ 20%	½		BTS-68K	Disc. Diode Load
R148	270KΩ	½		BTS-270K	Diode Load
R149	10 Meg. 20%	½		BTS-10 Meg.	AF Grid
R150	2.2 Meg. 20%	½		BTS-2.2 Meg.	AF Screen
R151	470KΩ 20%	½		BTS-470K	AF Plate
R152	100KΩ 20%	½		BTS-100K	AF Plate Decoupling
R153	470KΩ 20%	½		BTS-470K	Output Grid
R154	270Ω	1		BW-1-270	Output Cathode
R155	47Ω 20%	½			Parasitic Supp.
R156	2000Ω	5	R62773	AB-2000	Filter-Wire Wound
R157	4700Ω	2		BTS-4700	Trap Coil Shunt

Items C109 and R127 are combined into one unit, obtainable under MFGR'S Part No. R67575.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA SILVERTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC ② 2.28A	760VCT .285ADC	5VAC ② 6A	6.3VAC ② 8.4A	R70190	P-8156 ③ ④	P-3081 ③	TP-395 ③

③ Drill new mounting holes.
④ Rewire filament string as required.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING SEC.	REPLACEMENT DATA SILVERTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	73Ω	SEC. 1	R67083				Hor. Disc. Transformer
	CT	9Ω					
		SEC. 2					
		36Ω					
T3	120Ω	630Ω	R65428	A-8111	A-3000	TSO-1	Vert. Block Osc. Trans.
T4	410Ω	SEC. 1	R70155	A-8117		TFB-1	Hor. Output Trans.
	Tap ②	10.8Ω					
	175Ω	Tap ② .7Ω					
		SEC. 2					
		0Ω					
T5	560Ω	8.5Ω	R65451	A-8115	A-3035	TSO-1	Vert. Output Trans.
T6A	14Ω		R65461	DY-1			Hor. Deflection Coil
B	57Ω						Vert. Deflection Coil
T7	215Ω		R70519				Focus Coil

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA SILVERTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T8	117VAC ② .43A	530VCT .066ADC	6.3VAC ② 2.9A		R66191	P-8119 ①	P-2951 ①	PH-70B ①

① Add series resistor to reduce plate voltage.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA SILVERTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T9	7.5KΩ	3.6Ω	700Ω Tap ② 23Ω	.5Ω	R66192		A-3032 ②		② Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS FIELD RES.	RATINGS V. C. IMP.	REPLACEMENT DATA SILVERTONE PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1	PM	3.6Ω	R67904	ST-117 MOD. P8-T	8A31	
	CONE DIA.	V. C. DIA.				
SP2	7 3/4"	3/4"	R67924			

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	Silvertone PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.285A	23Ω	.5 Henry	R67133	C-2326 ②	C-2991 ②	TR-3300②	② Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	SILVERTONE PART No.	MEISSNER PART No.	
L2	Ant. Matching	0Ω				L2 and L3 are included in part number R70344.
L3	Ant. Matching	0Ω				
L4	Ant. Input Trans.	0Ω				Wound on powdered iron core and 1000Ω resistor.
L5	Ant. Input	0Ω				High-Band
L6	Ant. Input	0Ω				Low-Band
L7	Fil. Choke	0Ω				
L8	Conv. Trans.	.1Ω		R61651		
L9	Fil. Choke	0Ω		R65734		
L10	1st Video IF	.2Ω	0Ω	R70656		
L11	2nd Video IF	.2Ω	0Ω	R65426		
L12	3rd Video IF	.2Ω	0Ω	R65426		
L13	4th Video IF	.2Ω	0Ω	R65426		
L14	5th Video IF	.2Ω	0Ω	R65426		
L15	Peaking	5Ω		R65474		
L16	Peaking	8Ω		R65497		
L17	Peaking	4Ω		R67123		
L18	Peaking	6Ω		R67143		
L19	Peaking	4Ω		R67123		
L20	Peaking	5Ω		R65474		
L21	Peaking	6.5Ω		R67122		
L22	1st Sound IF	6Ω		R70077		
L23	2nd Sound IF	2.5Ω	2.5Ω	R70834		
L24	Disc. Trans.	2.5Ω		R70181		Primary
L25	Disc. Trans.	3Ω		R70182		Secondary
L26	Ringing Coil	33Ω		R65453		
L27	Width Cont.	.2Ω		R65452		
L28	Hor. Linearity Control	33Ω		R65453		
L29	AM Loop Ant.	2Ω		R67901		
L30	FM Ant.	0Ω		R66187		
L31	FM Osc.	0Ω		R66186		
L32	AM Osc.	2.5Ω		R66184		
L33	FM Osc. Cathode Choke	.5Ω		R66189		
L34	FM Osc. Plate Choke	.5Ω		R66188		
L35	1st FM IF	.1Ω	.1Ω	R67802		
L36	1st AM IF	17Ω	8Ω	R67800	16-6678	
L37	2nd FM IF	1.5Ω	.5Ω	R67803		
L38	2nd AM IF	12Ω	12Ω	R67801	16-6678	
L39	3rd AM IF-Disc. Trans. Pri.	9Ω 1.5Ω		R67804		
L40	Disc. Trans. Sec.	3.5Ω		R67810		
L41	Fil. Choke	0Ω		R66180		
L42	Fil. Choke	0Ω		R66180		
L43	Line Choke	0Ω		R66180		
L44	Line Choke	0Ω		R66180		

MISCELLANEOUS

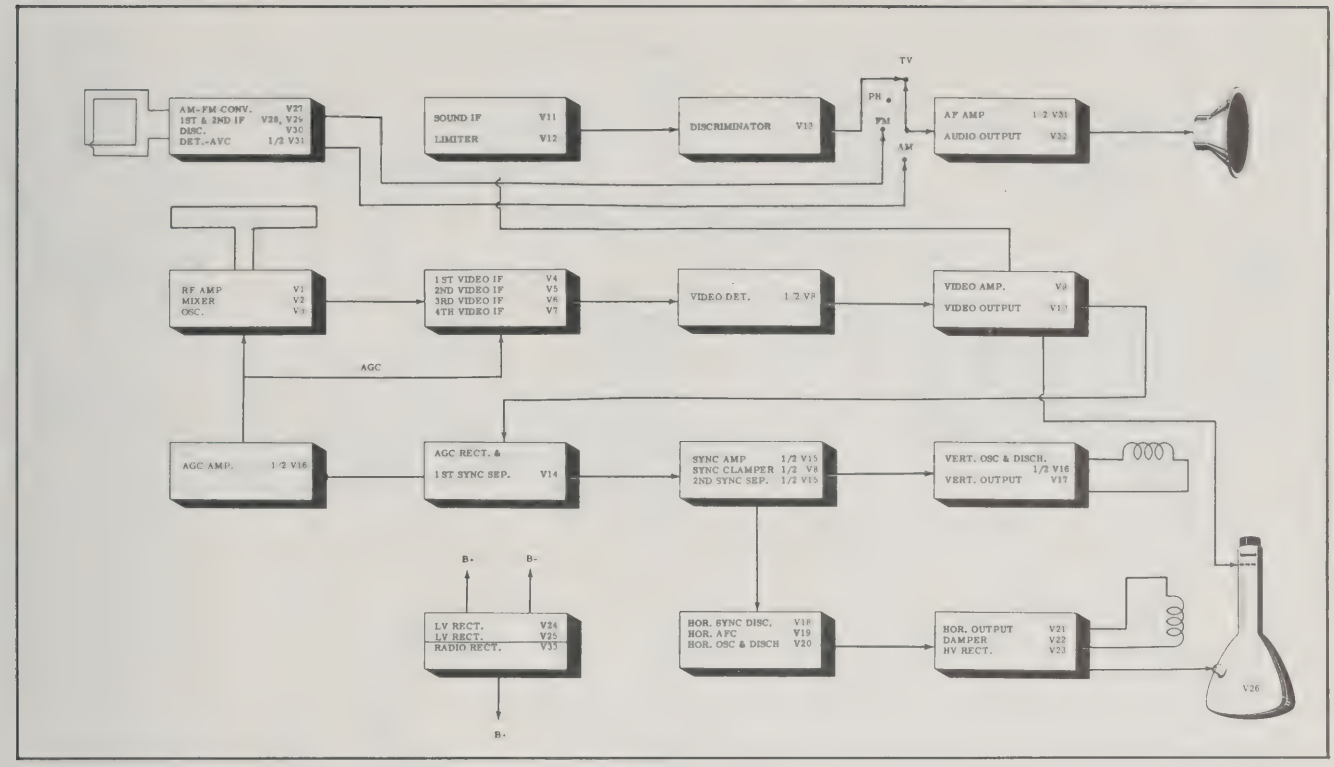
ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
M1	RF Tuner		
M2	Switch	R70324	TV On-Off
M3	Fuse	R70068	.25A 250V
M4	Ion Trap	R70842	Permanent Magnet Type
M7	Switch	R67764	FM-AM-Phono-TV
M8	Tuning Cap.	R66190	(36-540MMF) (19-197MMF) W/T
	Safety Glass	R67863	10"
	Safety Glass	R67849	12 1/2"
	Knob	R67738	Brightness
	Knob	R67861	Channel selector
	Knob	R67737	Contrast
	Knob	R67862	Fine Tuning
	Knob	R67736	Horiz. hold
	Knob	R67895	On-Off
	Knob	R67778	Selector
	Knob	R67739	Vert. hold
	Knob	R67778	FM-AM-Phono-TV
	Knob	R67406	On-Off, Tone
	Knob	R67407	Tuning
	Knob	R67408	Volume

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					SILVERTONE PART No.		
M5	Bayonet	6-8V	.15A	Brown			Type #47

PHONO CARTRIDGE and NEEDLE

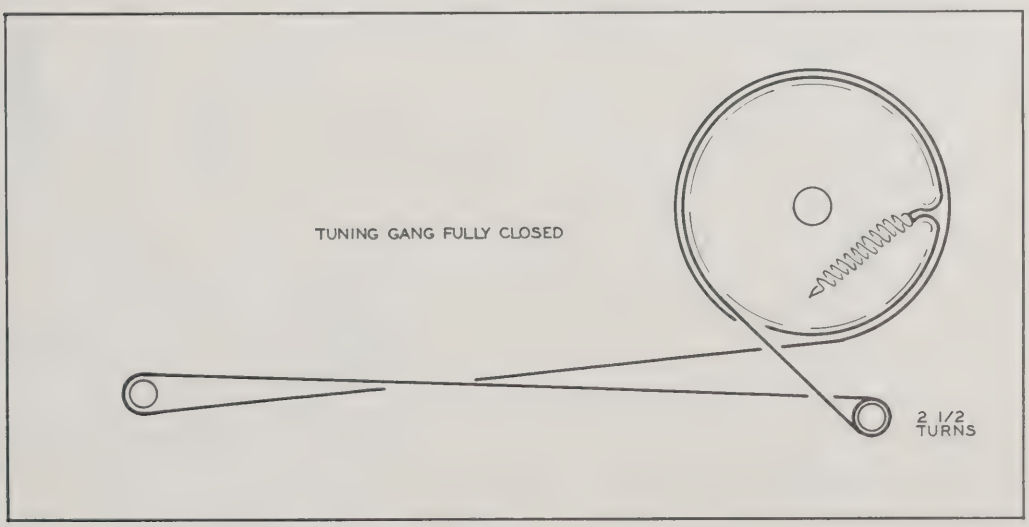
ITEM No.	REPLACEMENT DATA					REMARKS
	SILVERTONE PART No.	ASTATIC PART No.		SHURE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M6		ACD-J or LQD-1J	C-1(J) and C-3(J) Q (J) and Q-33(J)	W22A	A65MG A61A	



BLOCK DIAGRAM

DISASSEMBLY INSTRUCTIONS

1. Remove five TV and four AM-FM push-on type control knobs.
2. Remove fourteen phillips head screws holding rear cover. Remove cover.
3. Remove two phillips head screws holding antenna terminal strip.
4. Remove TV audio plug from radio chassis.
5. Remove four screws holding TV chassis. Remove chassis.
6. Remove phono motor power plug from radio chassis.
7. Remove speaker plug from radio chassis.
8. Remove phono audio plug from radio chassis.
9. Unsolder loop antenna leads or remove four staples holding loop antenna. Let hang.
10. Remove four screws holding radio chassis. Remove chassis.
11. Remove four 11/32" hex nuts holding speaker. Remove speaker.



RADIO DIAL CORD STRINGING

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TELE-TONE MODELS

TV208TR, TV220

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MODEL TV220

TELE-TONE MODELS

TV208TR, TV220

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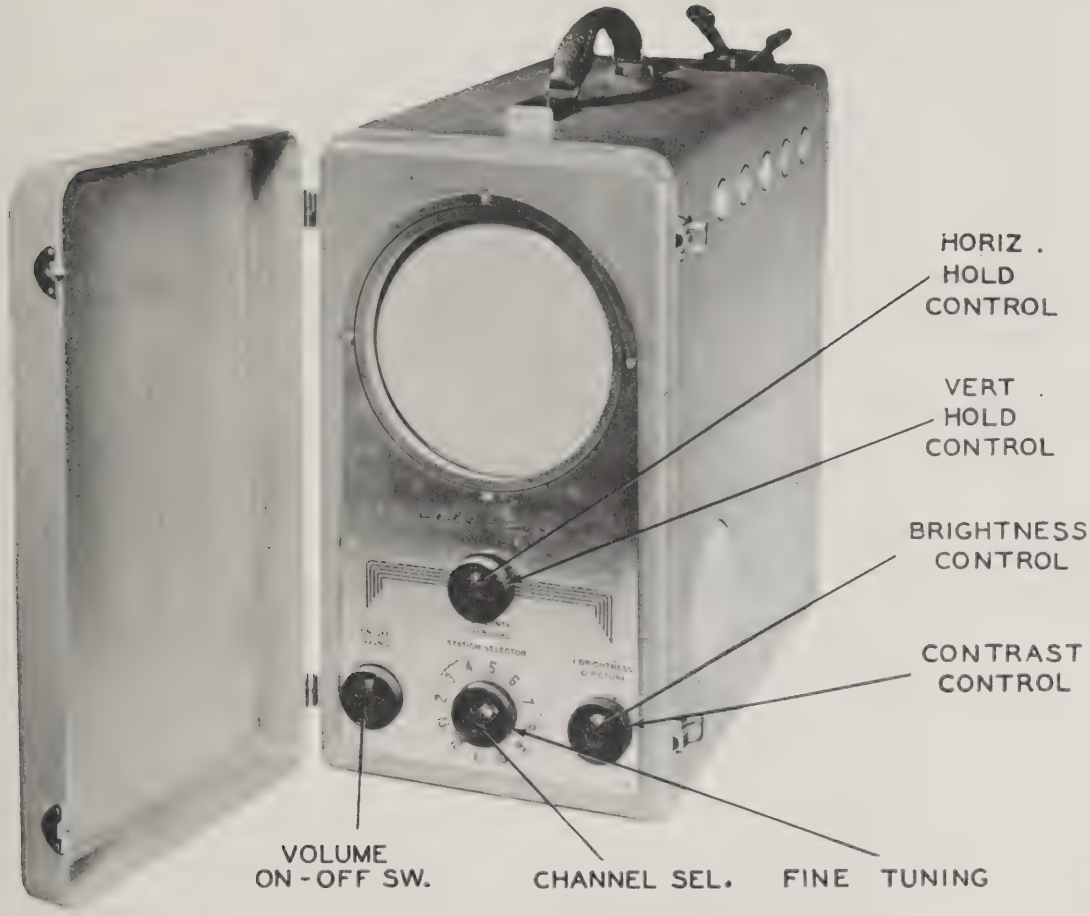
TELE-TONE
MODELS TV208TR, TV220



TELE-TONE
MODELS TV208TR, TV220

TELE-TONE MODEL TV220

TRADE NAME	Tele-Tone Models TV208TR, TV220 (Ch. TR)
MANUFACTURER	Tele-Tone Radio Corp., 540 W. 58th St., New York 19, New York
TYPE SET	Television Receiver
TUBES	Twenty One
POWER SUPPLY	105-125 Volts AC-60 Cycle
RATING	.98 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13

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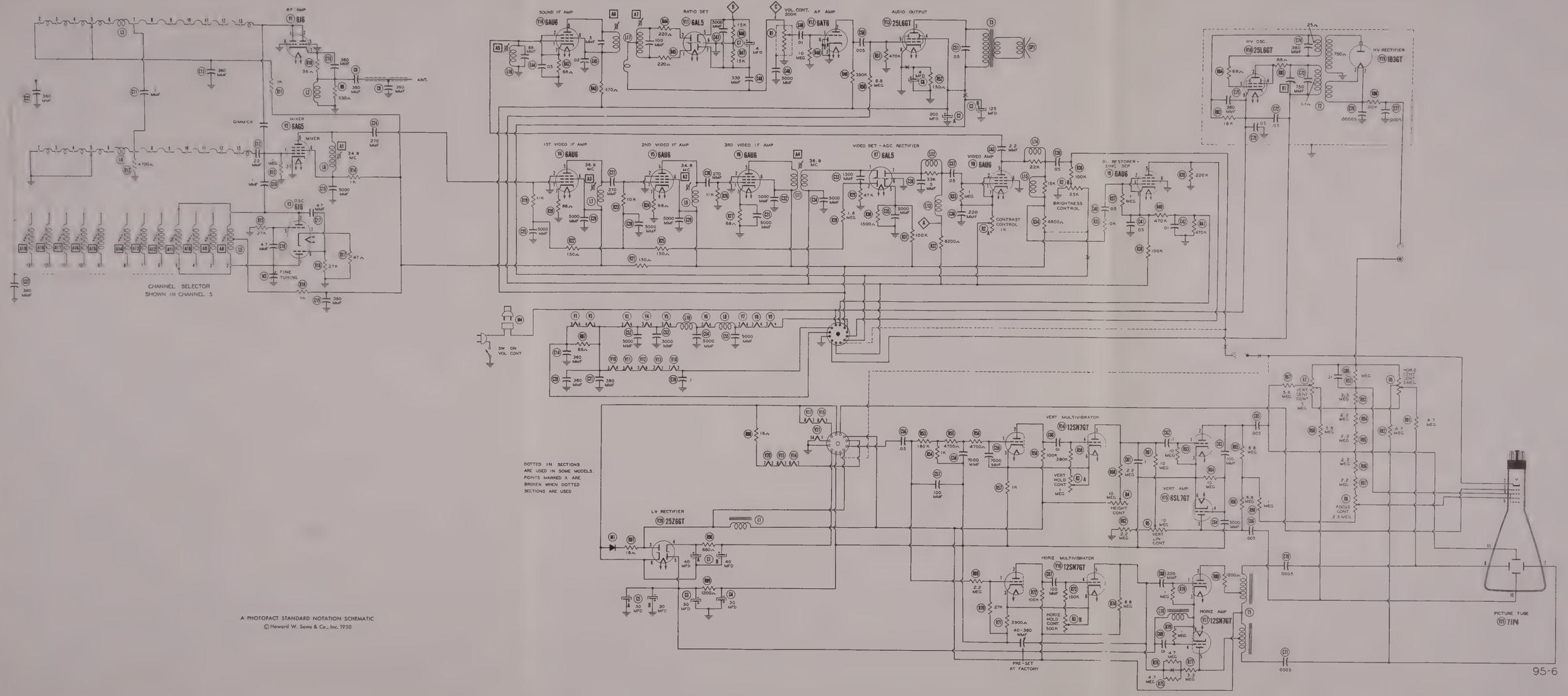

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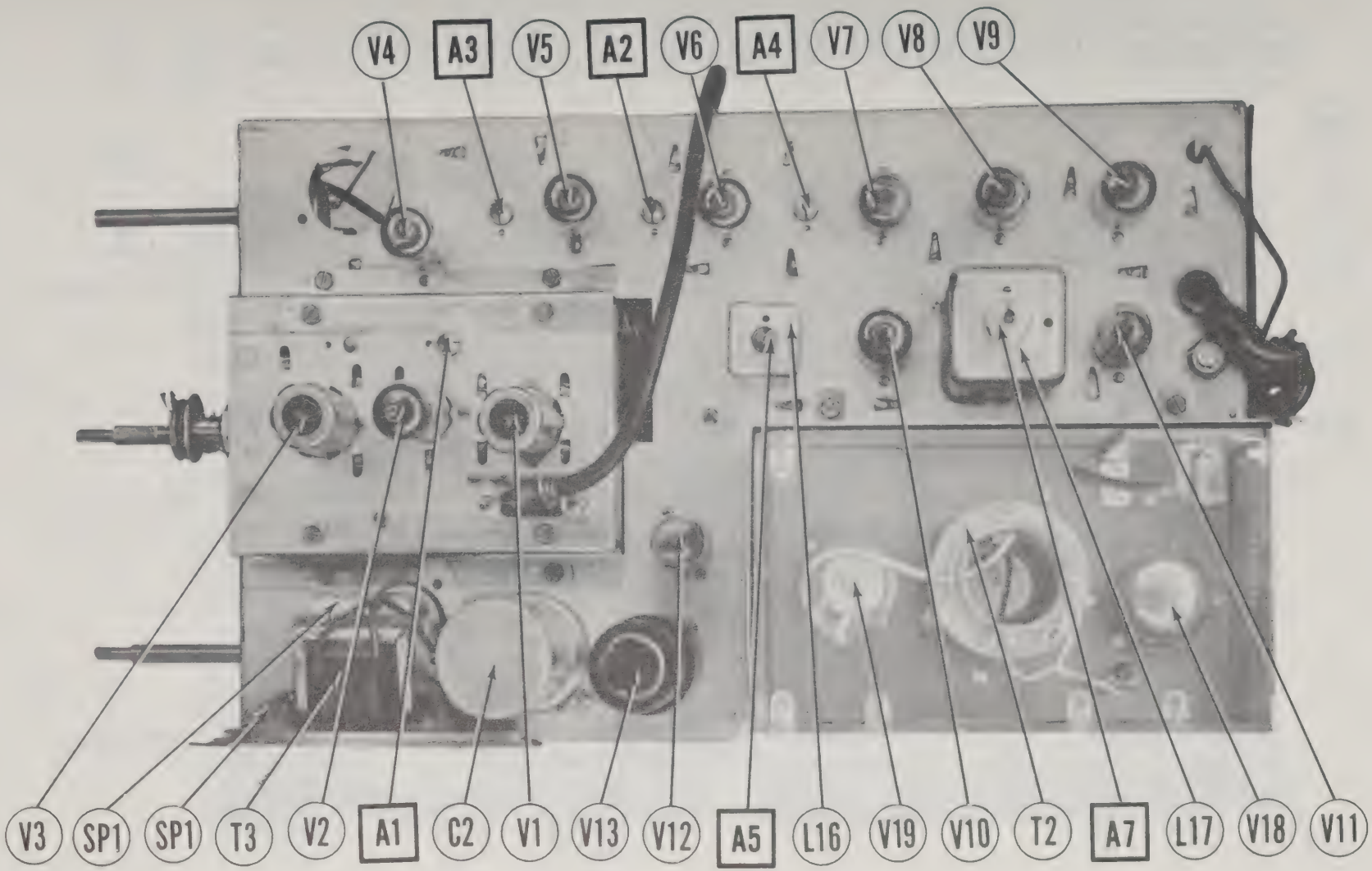
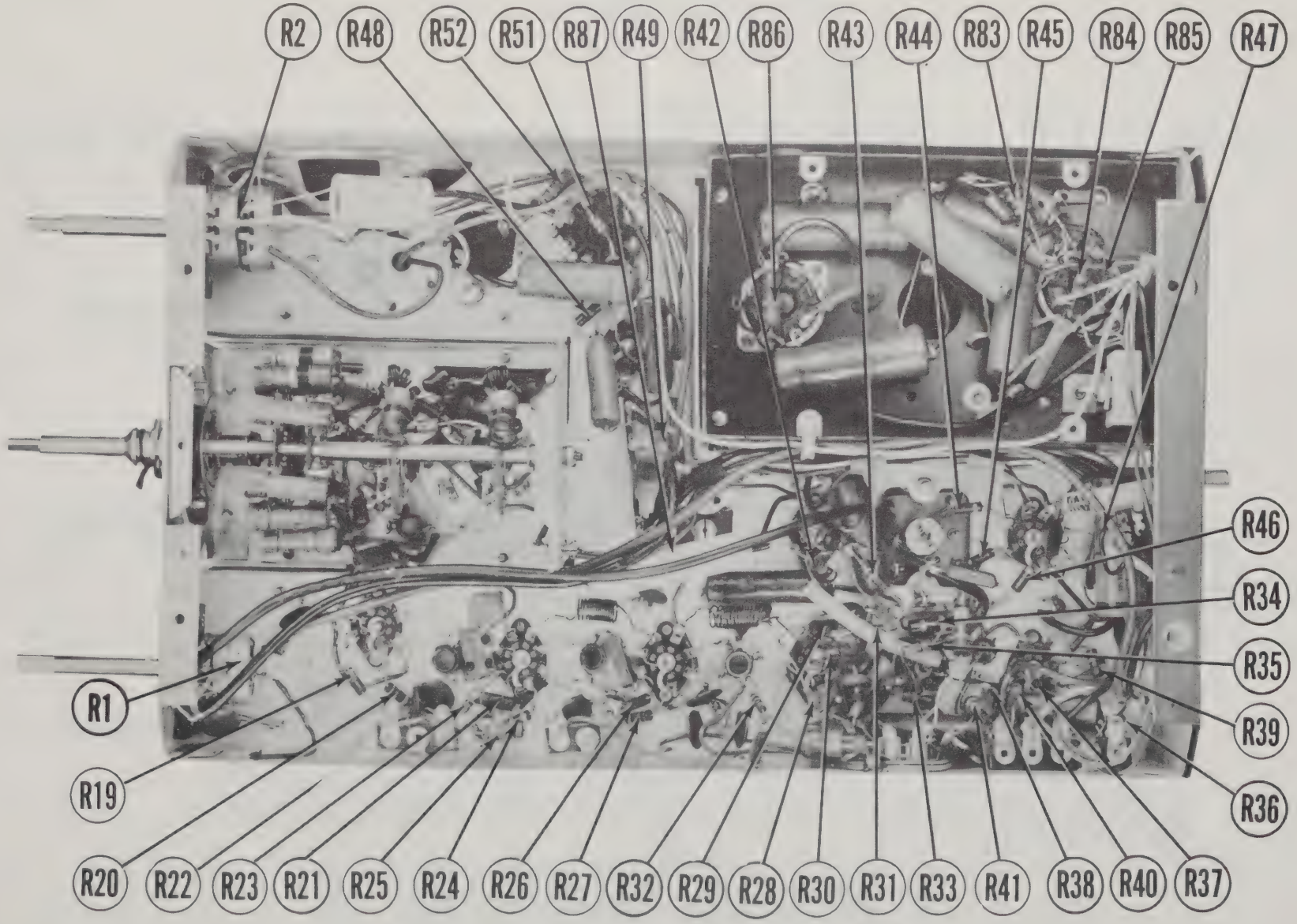
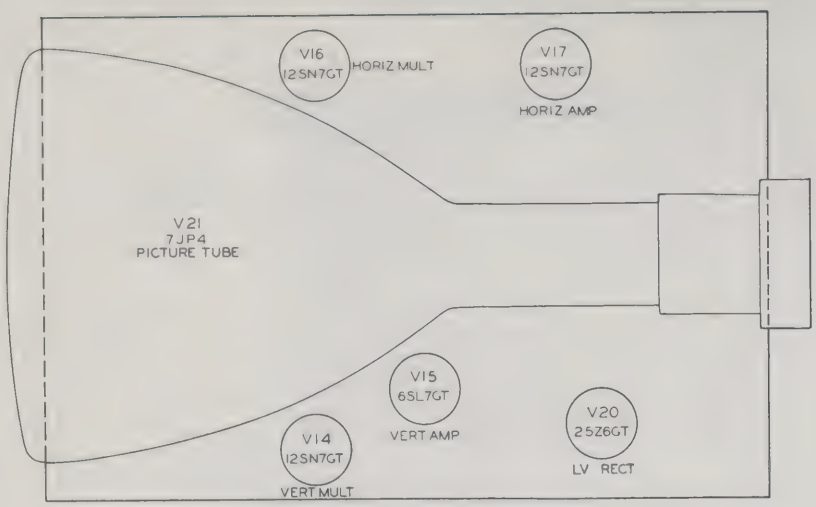
MODELS TV208TR, TV220



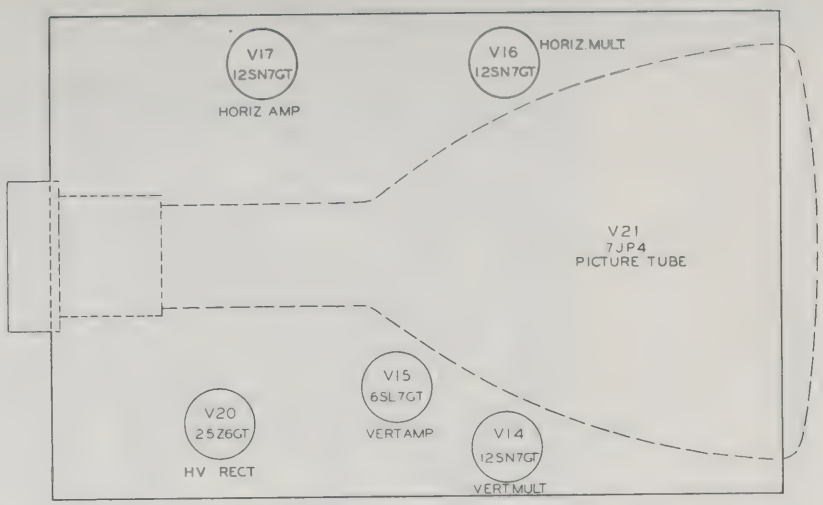
RF-IF CHASSIS-TOP VIEW



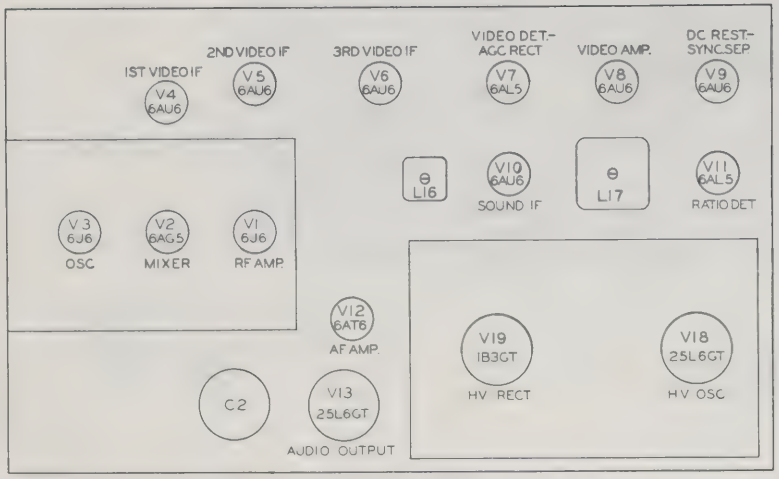
RF-IF CHASSIS-BOTTOM VIEW-RESISTOR IDENTIFICATON

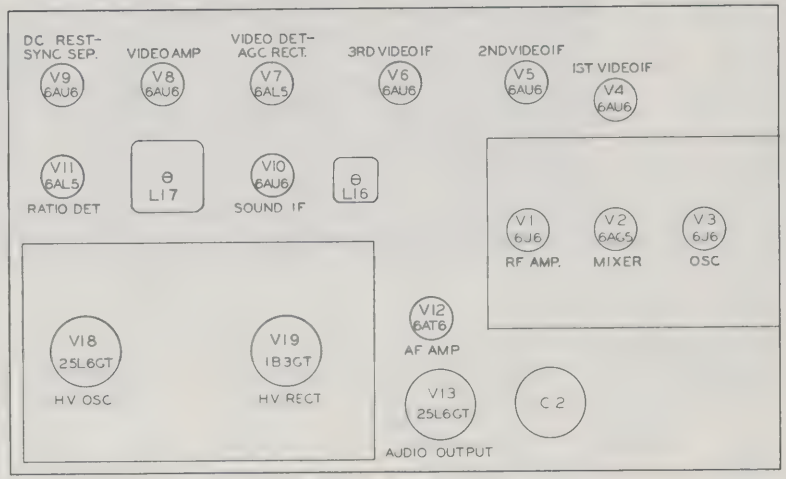


TOP VIEW



BOTTOM VIEW





TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

If the picture tube is removed during alignment, short pins 1 and 14 of the picture tube socket to complete the filament circuit. Use an isolation transformer to protect the test equipment.

VIDEO IF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	34.8MC (Unmod.)	Any	DC Probe and common leads across R32.	A1, A2	Adjust for maximum deflection.
2.	Direct	"	36.9MC	"	"	A3, A4	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. Set the channel switch to any channel where interference from the local oscillator is minimum. To check for erroneous indications turn the fine tuning control; if the pattern on the scope changes, switch to another channel.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	35MC (10MC SWP)	32.6MC 34.8MC 36.9MC 37.3MC	See note above	Vert. Amp. to Point ◇A◇ Low side to chassis.		Check for response curve similar to Fig 1 with proper marker placement. If necessary retouch A1 and A2 to correct the low frequency end, and A3 and A4 to correct the high frequency end of the response curve.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
4.	.01MFD	High side to pin 1 (Grid) of 6AU6 (V8). Low side to chassis.	4.5MC (Unmod.)	Any channel unused locally.	DC Probe to Point ◇B◇ Common to chassis.	A5, A6	Adjust for maximum deflection.
5.	.01MFD	"	"	"	DC Probe to Point C. Common to chassis.	A7	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 ~ modulation and 450KC sweep. Use 120 ~ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	.01MFD	High side to pin 1 (Grid) of 6AU6 (V8). Low side to chassis.	4.5MC (1MC SWP)	4.5MC	Any channel unused locally.	Vert. Amp. to Point ◇B◇ Low side to chassis.	A5, A6	Adjust for maximum amplitude and symmetry as per Fig 2.
5.	.01MFD	"	"	"	"	Vert. Amp. to Point ◇C◇ Low side to chassis.	A7	Adjust A7 so 4.5MC occurs at center of crossover lines as per Fig 3. SLIGHTLY retouch A6 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

The RF and mixer circuits in this tuner are pre-set at the factory and are very stable and normally should not require adjustment in the field. Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Direct	High side to center conductor of antenna input cable. Low side to outer shield.	57MC (10MC SWP)	55.25MC 59.75MC	2	Vert. Amp. to Point ◇A◇ Low side to chassis.	A8	Adjust to place sound marker as shown in Fig 4. The video marker should fall between 45 and 60% on opposite side of response curve. If the video marker does not fall within the proper range on ALL channels, switch to channel 6 and make slight adjustments of video IF coils A1, A2, A3 and A4 to obtain proper results.
			63MC (10MC SWP)	61.25MC 65.75MC	3		A9	
			69MC (10MC SWP)	67.25MC 71.75MC	4		A10	
			79MC (10MC SWP)	77.25MC 81.75MC	5		A11	
			85MC (10MC SWP)	83.25MC 87.75MC	6		A12	
			177MC (10MC SWP)	175.25MC 179.75MC	7		A13	
			183MC (10MC SWP)	181.25MC 185.75MC	8		A14	
			189MC (10MC SWP)	187.25MC 191.75MC	9		A15	
			195MC (10MC SWP)	193.25MC 197.75MC	10		A16	
			201MC (10MC SWP)	199.25MC 203.75MC	11		A17	
			207MC (10MC SWP)	205.25MC 209.75MC	12		A18	
			213MC (10MC SWP)	211.25MC 215.75MC	13		A19	

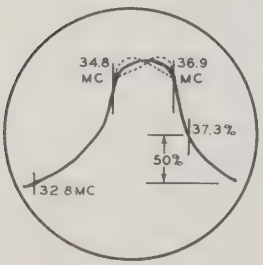


FIG. 1

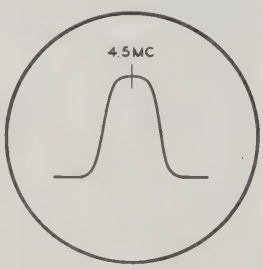


FIG. 2

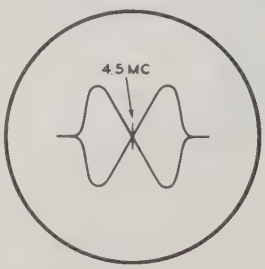


FIG. 3

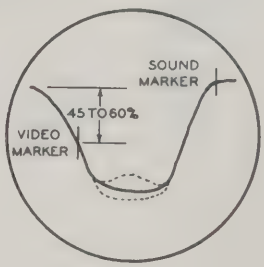
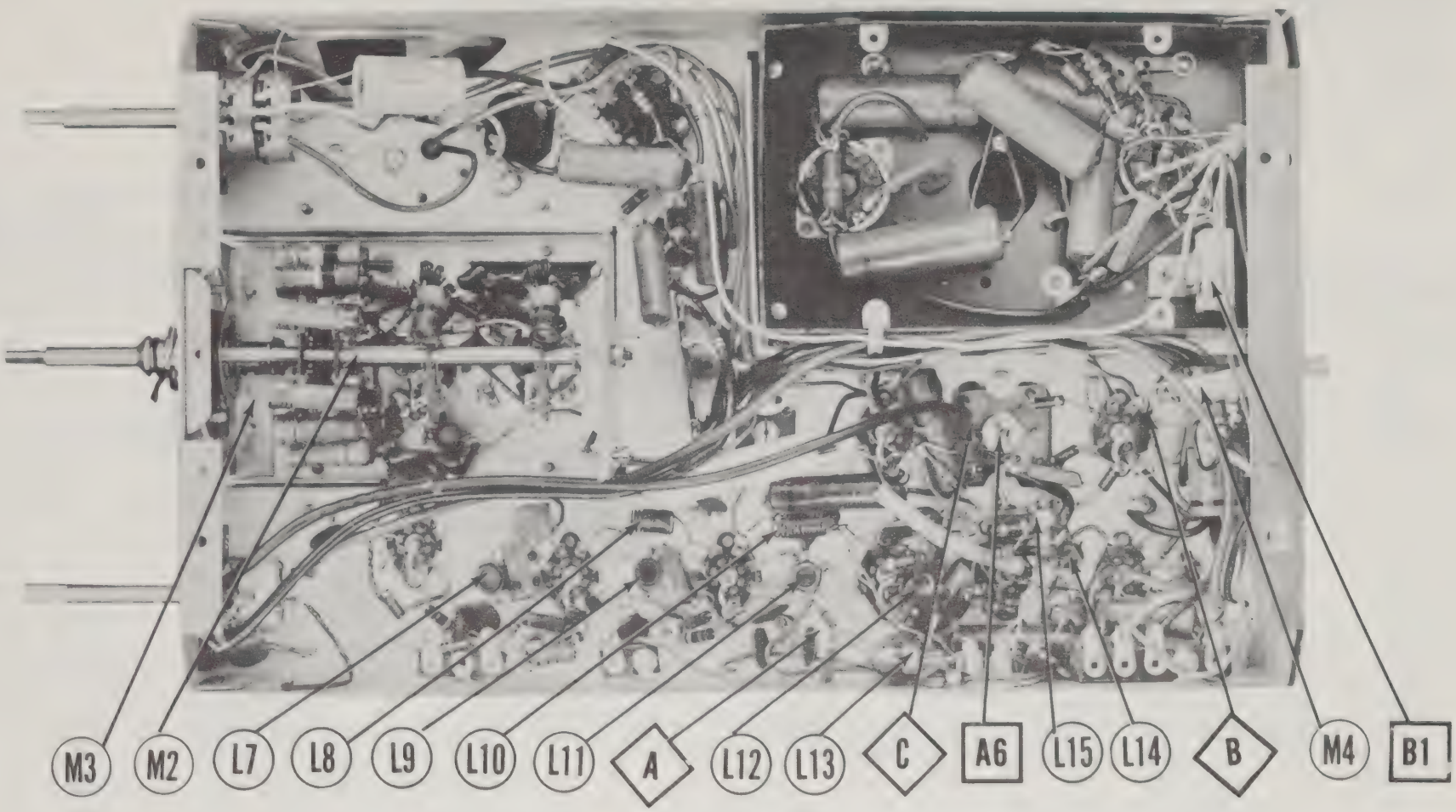


FIG. 4



RF-IF CHASSIS-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J8	90VDC	90VDC	7VAC	14VAC	0V.	0V.	.9VDC		
V 2	6AG5	-5.3VDC	0V.	21VAC	27VAC	100VDC	100VDC	0V.		
V 3	6J6	85VDC	85VDC	21VAC	14VAC	§-2.7VDC	§-2.4VDC	.3VDC		
V 4	6AU6	-.1VDC	0V.	27VAC	34VAC	105VDC	105VDC	.5VDC		
V 5	6AU6	-.2VDC	0V.	34VAC	41VAC	110VDC	110VDC	.5VDC		
V 6	6AU6	0V.	0V.	41VAC	48VAC	110VDC	110VDC	.8VDC		
V 7	6AL5	■0V.	0V.	48VAC	54VAC	1.7VDC	0V.	■-1.8VDC		
V 8	6AU6	■.2VDC	■9.4VDC	54VAC	60VAC	■180VDC	■125VDC	■9.4VDC		
V 9	6AU6	■ 1VDC	90VDC	60VAC	66VAC	■90VDC	■125VDC	■90VDC		
V 10	6AU6	0V.	.6VDC	21VAC	27VAC	100VDC	100VDC	.6VDC		
V 11	6AL5	0V.	0V.	27VAC	34VAC	.2VDC	0V.	-.2VDC		
V 12	6AT6	-.4VDC	0V.	34VAC	40VAC	0V.	0V.	50VDC		
V 13	25L6GT	0V.	40VAC	95VDC	105VDC	.1VDC	0V.	65VAC	7.3VDC	
V 14	12SN7GT	■0V.	■50VDC	■1.5VDC	■-9VDC	■7VDC ■20VDC	■1.5VDC	66VAC	79VAC	
V 15	6SL7GT	■-4.5VDC	■310VDC	■0V.	■-.9VDC	■290VDC ■320VDC	■0V.	79VAC	85VAC	
V 16	12SN7GT	■0V.	■105VDC	■4.7VDC	■-.2VDC	■17VDC	■4.7VDC	90VAC	104VAC	
V 17	12SN7GT	#-.9VDC	#220VDC	#1.1VDC	#-2.6VDC	#235VDC	#1.1VDC	104VAC	117VAC	
V 18	25L6GT	¶-43VDC	90VAC	¶215VDC	¶215VDC	¶-43VDC	¶218VDC	65VAC	¶0V.	
V 19	1B3GT	* DO NOT MEASURE.								
V 20	25Z6GT	0V.	85VAC	117VDC	260VAC	-130VDC	0V.	110VAC	117VAC	
V 21	7JP4	PIN 1	PIN 2	PIN 3	PIN 5	PIN 7	PIN 8	PIN 9	PIN 10	PIN 11	PIN 14
		7VAC	105VDC	-14VDC	*	*	*	*	*	*	0V.

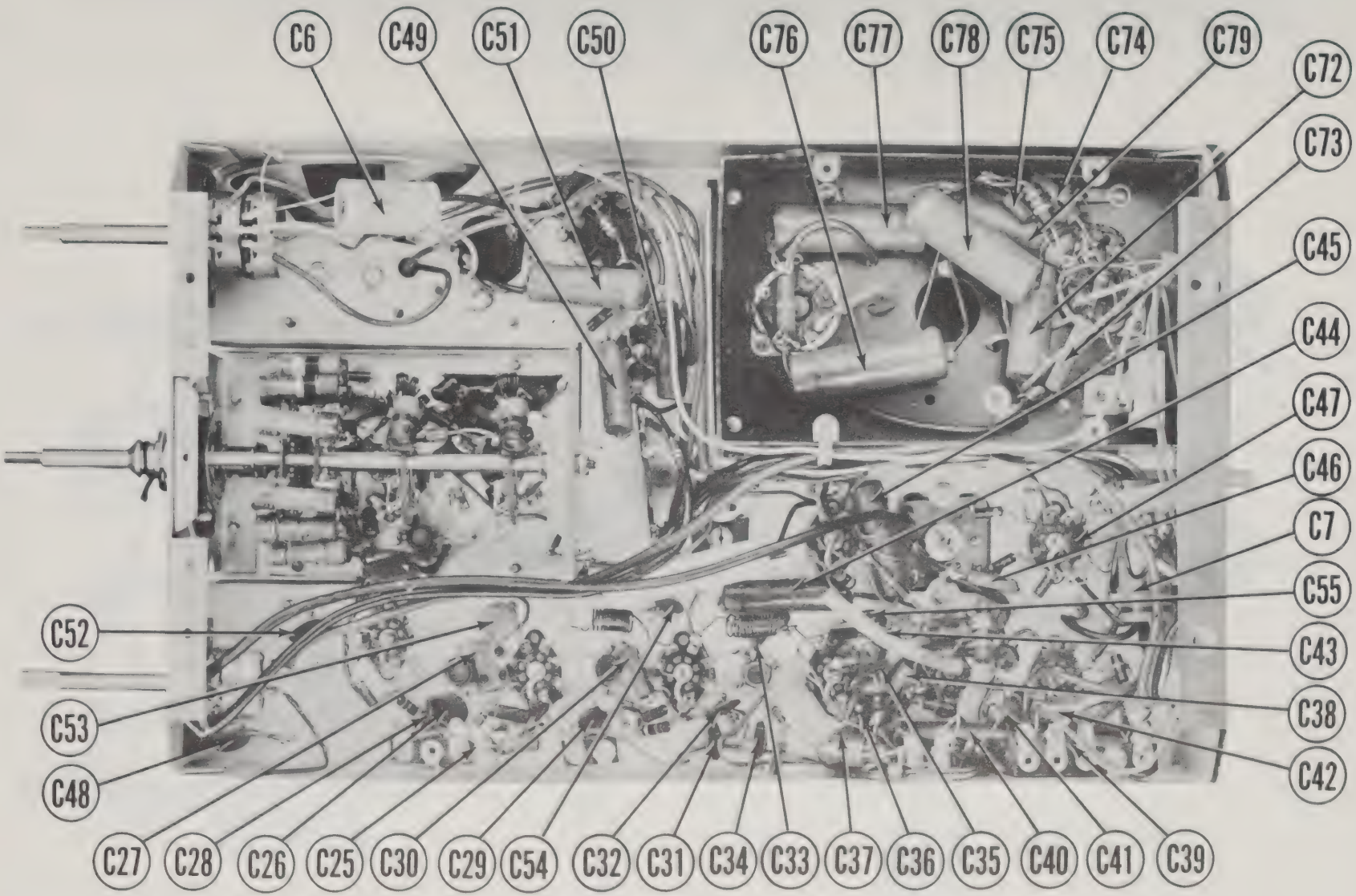
§ TAKEN WITH VACUUM TUBE VOLTMETER.
■ MEASURED FROM PIN 3 OF V15.
MEASURED FROM PIN 5 OF V20.
¶ MEASURED FROM PIN 8 OF V18.
* DO NOT MEASURE.

RESISTANCE READINGS

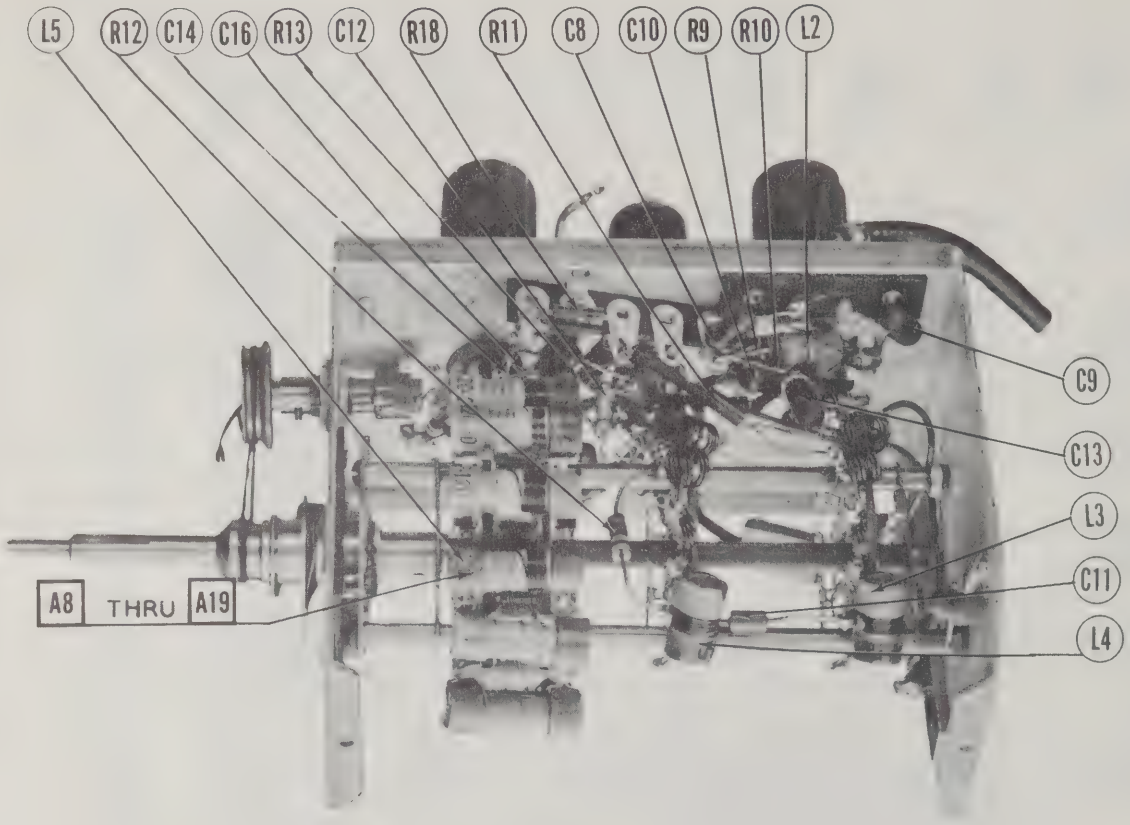
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	†1.2KΩ	†1.2KΩ	1.5Ω	4Ω	0Ω	0Ω	56Ω		
V 2	6AG5	1 Meg.	0Ω	5.5Ω	8.5Ω	†1.2KΩ	†1.2KΩ	0Ω		
V 3	6J6	†1.2KΩ	†1.2KΩ	5.5Ω	4Ω	27KΩ	27KΩ	47Ω		
V 4	6AU6	1.8 Meg.	0Ω	8.5Ω	13Ω	†250Ω	†250Ω	68Ω		
V 5	6AU6	1.8 Meg.	0Ω	13Ω	16Ω	†100Ω	†100Ω	68Ω		
V 6	6AU6	11KΩ	0Ω	16Ω	20Ω	†100Ω	†100Ω	68Ω		
V 7	6AL5	■.2Ω	47KΩ	20Ω	22Ω	1.5KΩ	0Ω	■8.2KΩ		
V 8	6AU6	■1 Meg.	■ 1000Ω	22Ω	25Ω	†6.8KΩ	0Ω	■ 1000Ω		
V 9	6AU6	■ 1 Meg.	■ 100KΩ	25Ω	27Ω	220KΩ	0Ω	■ 100KΩ		
V 10	6AU6	1.5Ω	68Ω	5.5Ω	10Ω	†570Ω	†570Ω	68Ω		
V 11	6AL5	500KΩ	500KΩ	10Ω	13Ω	15KΩ	0Ω	15KΩ		
V 12	6AT6	10 Meg.	0Ω	13Ω	16Ω	0Ω	0Ω	†390KΩ		
V 13	25L6GT	0Ω	16Ω	†300Ω	†100Ω	470KΩ	Inf.	24Ω	150Ω	
V 14	12SN7GT	■10.5KΩ	†100KΩ	■ 1000Ω	■ 390KΩ	†5 Meg. †1.8 Meg.	■1000Ω	27Ω	30Ω	
V 15	6SL7GT	■ 10 Meg.	♦22 Meg.	■0Ω	■ 10 Meg.	♦ 22 Meg.	■0Ω	30Ω	31Ω	
V 16	12SN7GT	■27KΩ	†100KΩ	■3.9KΩ	■650KΩ	†2 Meg.	■ 3.9KΩ	30Ω	31Ω	
V 17	12SN7GT	# 1 Meg.	†1.5KΩ	#38Ω	# 1 Meg.	†300Ω	#38Ω	31Ω	31.5Ω	
V 18	25L6GT	¶18KΩ	30Ω	▲750Ω	▲750Ω	¶18KΩ	▲700Ω	24Ω	¶0Ω	
V 19	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP 750Ω
V 20	25Z6GT	Inf.	31Ω	17KΩ	650KΩ	600KΩ	Inf.	32Ω	32Ω	
V 21	7JP4	PIN 1	PIN 2	PIN 3	PIN 5	PIN 7	PIN 8	PIN 9	PIN 10	PIN 11	PIN 14
		1.5Ω	120KΩ	320KΩ	♦12 Meg.	♦5.5Meg.	♦5.5Meg.	♦1Meg.	♦6.8Meg.	♦6 Meg.	0Ω

■ MEASURED FROM PIN 3 OF V15.
¶ MEASURED FROM PIN 8 OF V18.
# MEASURED FROM PIN 5 OF V20.
† MEASURED FROM OUTPUT OF M1.
♦ MEASURED FROM PIN 7 OF V19.
▲ MEASURED FROM PIN 4 OF V20.

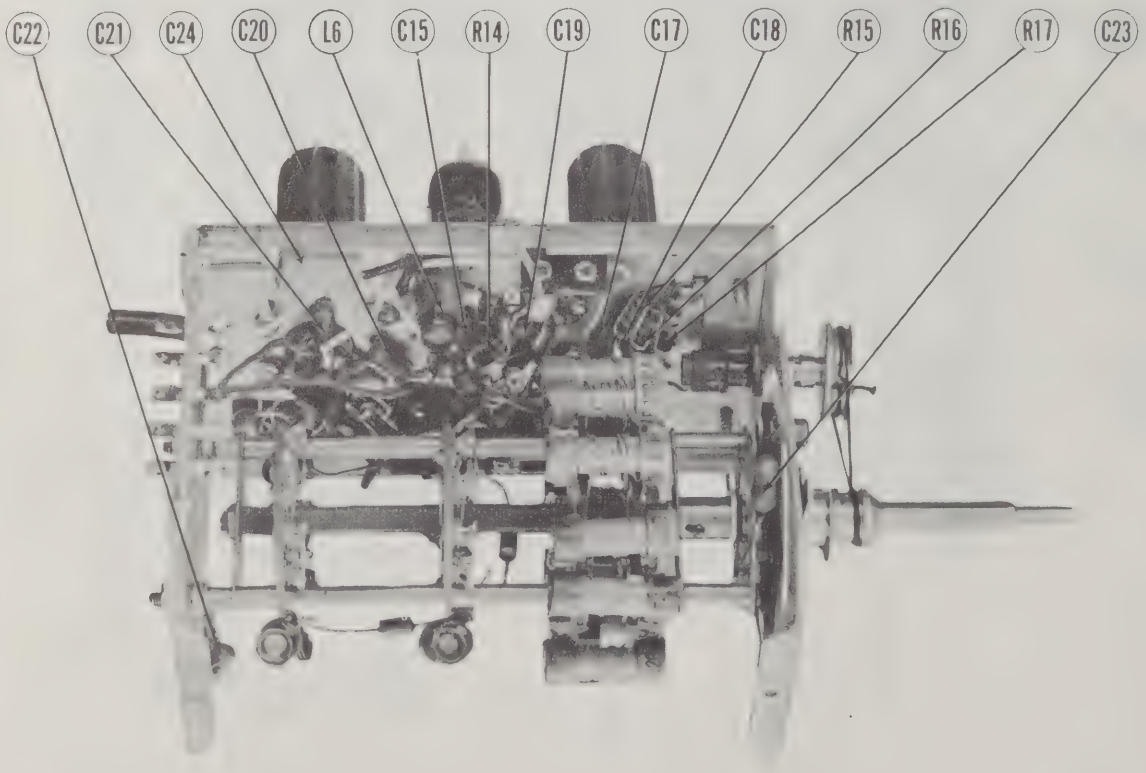
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



RF-IF CHASSIS-BOTTOM VIEW-CAPACITOR IDENTIFICATION

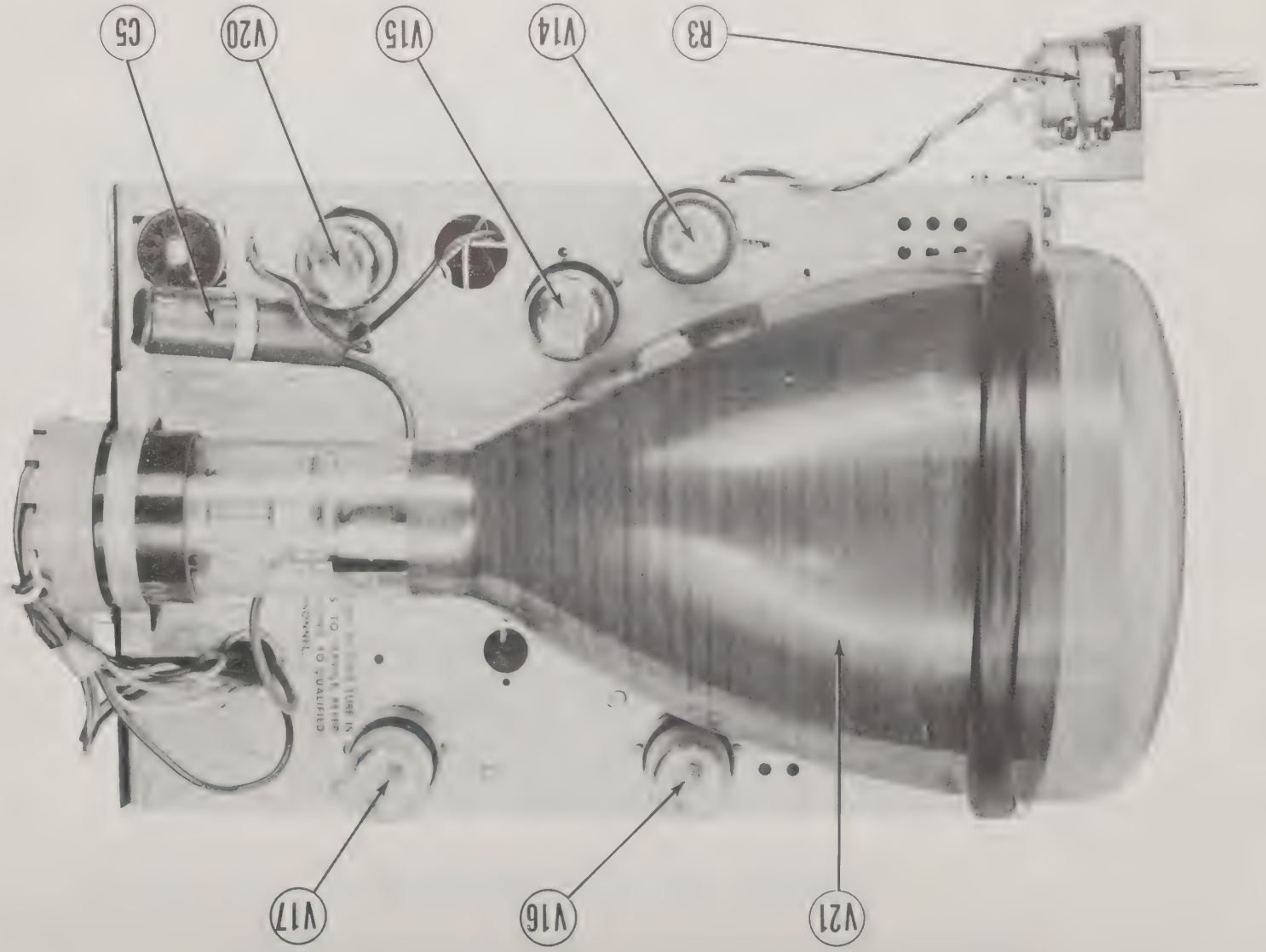


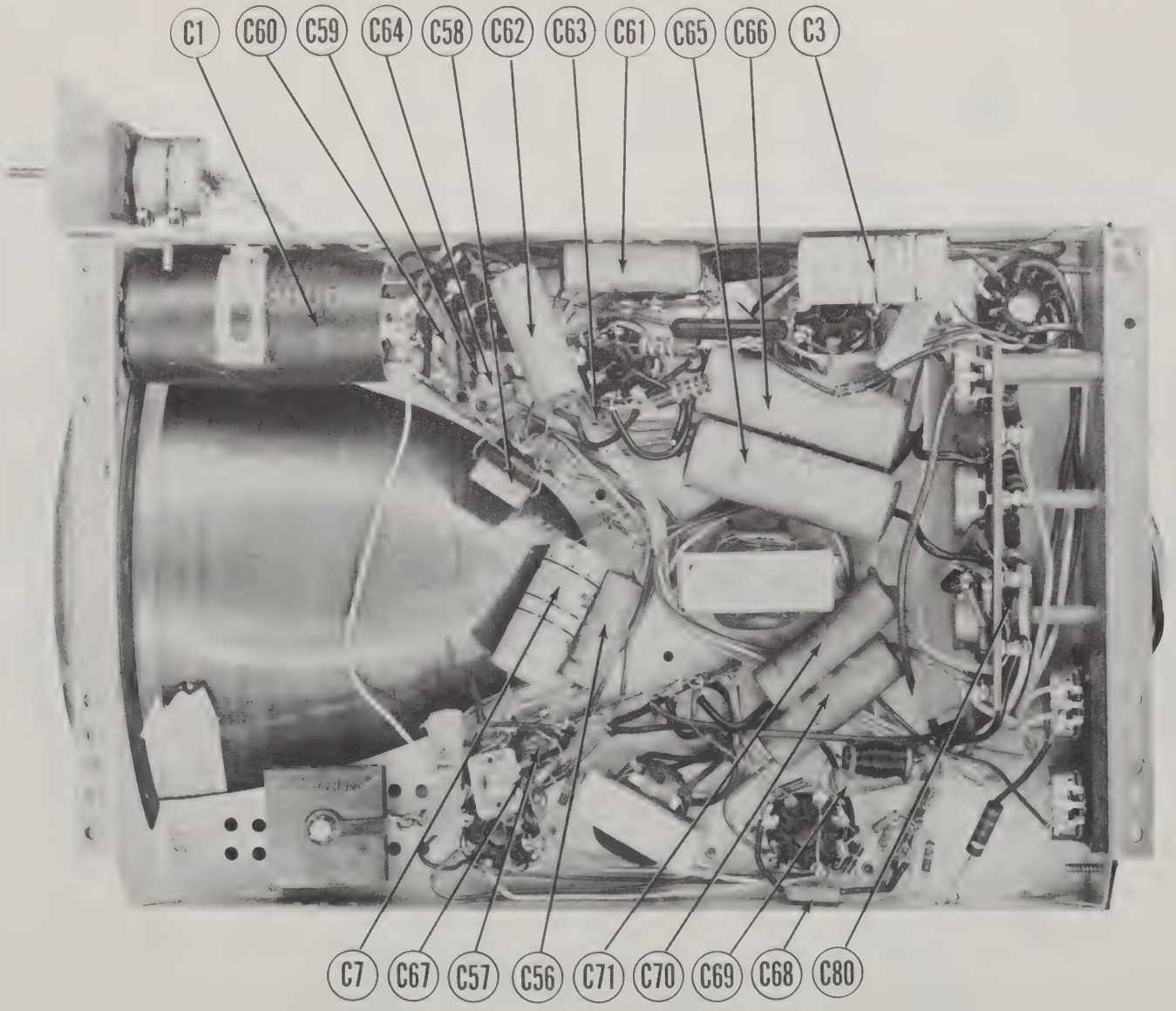
RF TUNER-RIGHT SIDE



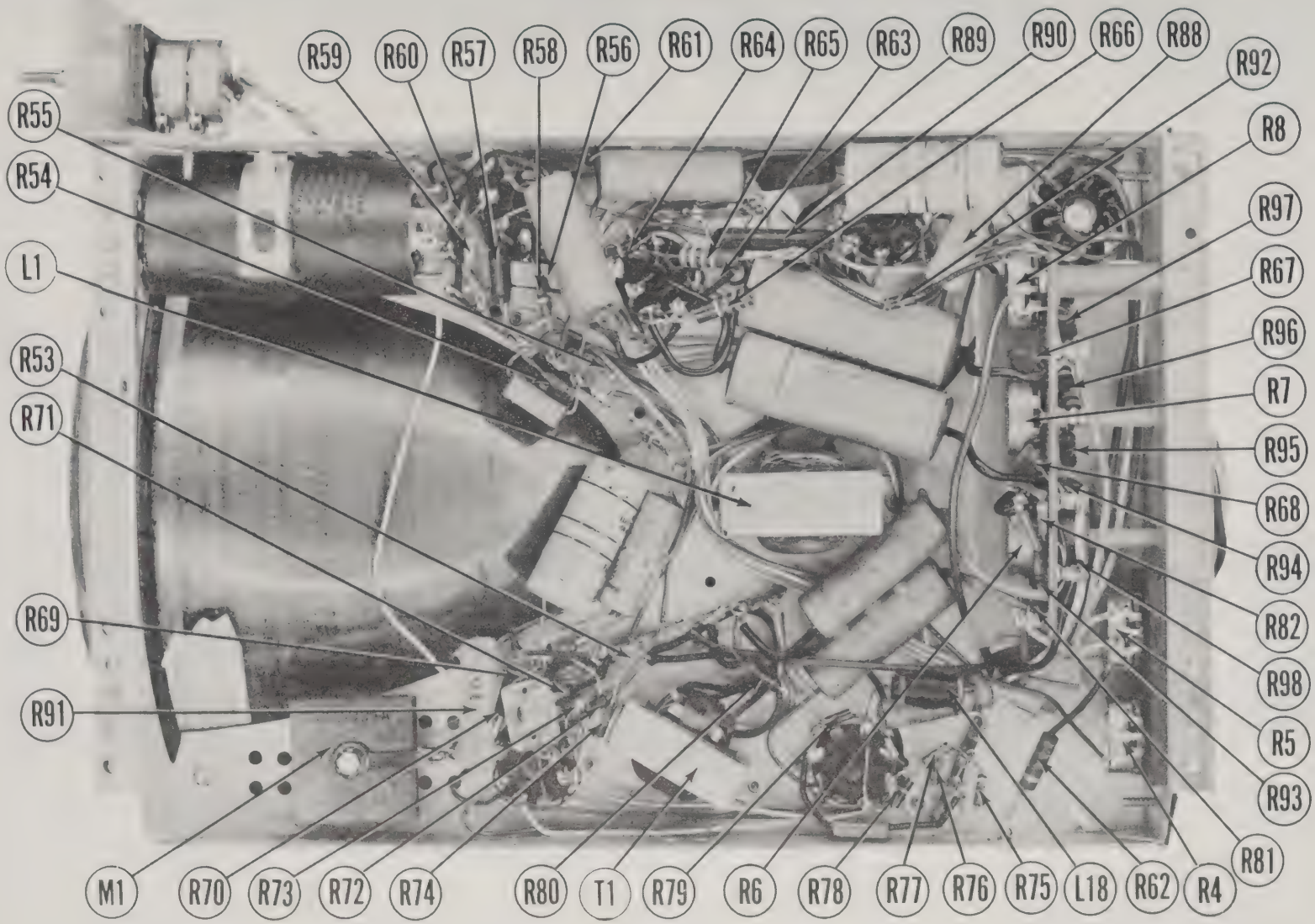
RF TUNER-LEFT SIDE

SWEEP CHASSIS-TOP VIEW





SWEEP CHASSIS-CAPACITOR IDENTIFICATION



SWEEP CHASSIS-RESISTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp.	6J6	6J6	7BF	
V2	Mixer	6AG5	6AG5	7BD	
V3	Oscillator	6J6	6J6	7BF	
V4	1st Video IF	6AU6	6AU6	7BK	
V5	2nd Video IF	6AU6	6AU6	7BK	
V6	3rd Video IF	6AU6	6AU6	7BK	
V7	Video Det.-AGC Rectifier	6AL5	6AL5	6BT	
V8	Video Amp.	6AU6	6AU6	7BK	
V9	DC Restorer-Sync. Sep.	6AU6	6AU6	7BK	
V10	Sound IF	6AU6	6AU6	7BK	
V11	Ratio Det.	6AL5	6AL5	6BT	
V12	AF Amp.	6AT6	6AT6	7BT	
V13	Audio Output	25L6GT	25L6GT	7AC	
V14	Vert. Multivib.	12SN7GT	12SN7GT	8BD	
V15	Vert. Amp.	6SL7GT	6SL7GT	8BD	
V16	Hor. Multivib.	12SN7GT	12SN7GT	8BD	
V17	Hor. Amp.	12SN7GT	12SN7GT	8BD	
V18	HV Osc.	35L6GT	35L6GT	7AC	
V19	HV Rectifier	1B3GT	1B3GT	3C	
V20	LV Rectifier	25Z6GT	25Z6GT	7Q	
V21	Picture Tube	7JP4	7JP4	14G	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	350	TCE-101-D	AF88J			TVL-64	▲ Voltage Doubler Cap.
B	40	350						▲ Filter
C2A	200	150	TCE-100-D	AF4025D			TVL-203	▲ Filter †
B	125	150						▲ Filter †
C3	30	200	TCE-103-D	PRS250/40			UT-402	Filter †
C4	30	200	TCE-103-D	PRS250/40			UT-402	Filter
C5A	50	150		PRSA150/50-30			TVA-19	Filter-Red ‡
B	30	150						Filter-Green ‡
C6	4	25	TCE-104-D	PRS150/4			TVA-13	Output Cathode Bypass *
C7	4	50	TCE-104-D	PRS150/4			TVA-13	Stabilizing Cap.
C8	360		TCC-361-10	GP360M	D6-391	GP2K-390		Ant. Coupling
C9	360		TCC-361-10	GP360M	D6-391	GP2K-390		Ant. Isolation
C10	360		TCC-361-10	GP360M	D6-391	GP2K-390		RF Cathode Bypass
C11	1		TCC-010-11		D2-1			RF Coupling
C12	22		TCC-22-12	GP22M	D6-220	GP1K-22		RF Coupling
C13	360		TCC-361-10	GP360M	D6-391	GP2K-390		RF Plate Decoupling
C14	360		TCC-361-10	GP360M	D6-391	GP2K-390		RF Filament Bypass
C15	5000		TCC-502-SP	BPD-5	D6-502	811-005		Mixer Screen Bypass
C16	1		TCC-010-11		D2-2			Osc. Coupling
C17	4.7		TCC-4.7-11	CN4.7DNPO	D2-4.7	NPOK-4.7		Osc. Feedback
C18	4.7		TCC-4.7-11	CN4.7DNPO	D2-4.7	NPOK-4.7		Osc. Feedback
C19	360		TCC-361-10	GP360M	D6-391	GP2K-360		RF Bypass
C20	360		TCC-361-10	GP360M	D6-391	GP2K-360		Mixer Filament Bypass *
C21	360		TCC-361-10	GP360M	D6-391	GP2K-360		Osc. Filament Bypass
C22	360		TCC-361-10	GP360M	D6-391	GP2K-360		Switch Bypass
C23	360		TCC-361-10	GP360M	D6 391	GP2K-360		Switch Bypass
C24	270	500	TCM 271-13	1468-00025	D6-271	GP2K-270	1FM-325	IF Coupling
C25	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	AGC Filter
C26	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	1st V. IF Decoupling
C27	270	500	TCM-271-13	1468-00025	D6-271	GP2K-270	1FM-325	IF Coupling
C28	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	AGC Filter
C29	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	2nd V. IF Decoupling
C30	270	500	TCM-271-13	1468-00025	D6-271	GP2K-270	1FM-325	IF Coupling
C31	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	3rd V. IF Cathode Bypass
C32	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	3rd V. IF Decoupling
C33	1500		TCC-152-10	GP1500M	D6-152	GP2L-0015	1FM-215	IF Coupling
C34	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	RF Bypass
C35	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	DAGC Decoupling
C36	5	300	TCC-050-11	1468-000005	D2-4.7	NPOK 5	MS-55	V. Diode Filter
C37	.05	400	TCP-503-4	P688-05			TM-15	Video Coupling
C38	220	500	TCM-221-7	1468-00025	D6-221	GP2K-220	1FM-325	V. Amp. Cathode Bypass
C39	.05	400	TCP-503-4	P688-05			TM-15	Video Coupling
C40	.05	400	TCP-503-4	P688-05			TM-15	Sync. Coupling
C41	.05	400	TCP-503-4	P688-05			TM-15	DC Res. Cath. Bypass
C42	.01	600	TCP-103-10	P688-01	D6-103	811-01	TM-11	Pic. Tube Grid Filter
C43	2.2		TCC 2.2-11		D2-2.2			S. IF Coupling
C44	.05	400	TCP-503-4	P688-05			TM-15	S. IF Cath. Bypass
C45	.02	600	TCP-203-10	P688-02			TM-12	S. IF Decoupling
C46	330	500	TCM-331-5	1468-00035	D6-331	GP2K-330	1FM-335	Diode Load Cap.
C47	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	RF Bypass
C48	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	Vol. Cont. Isolation
C49	.01	600	TCP-103-10	P688-01	D6-103	811-01	TM-11	Audio Coupling
C50	.005	600	TCP-502-10	P688-005	D6-502	811-005	TM-25	Audio Coupling
C51	.05	600	TCP-503-10	P688-05			TM 15	Output Plate Bypass
C52	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	1st V. IF Fil. Bypass
C53	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	2nd V. IF Fil. Bypass
C54	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	3rd V. IF Fil. Bypass
C55	5000		TCC-502-SP	BPD-5	D6-502	811-005	29C1	V. Det.-AGC Fil. Bypass
C56	.05	600	TCP-503-10	P688-05			TM-15	Sync. Coupling
C57	100	500	TCM-101-11	1468-0001	D6-101	GP1K-100	1FM-31	Voltage Divider
C58	7000	500	TCM-472-7	1467-007	D6 682	GP2-334-0068	1FM-27	Integrator Net.
C59	7000	500	TCM-472-7	1467-007	D6-682	GP2-334-0068	1FM-27	Integrator Net.
C60	.01	600	TCP-103-10	P688-01	D6-103	811-01	TM-11	Vert. MV Feedback
C61	.1	600	TCP-104-10	P688-1			TM-1	Vert. Discharge
C62	.1	600	TCP-104-10	P688-1			TM-1	Vert. Sweep Coupling
C63	100	2000	TCM-101-32					Vert. Sweep Coupling
C64	5000	500	TCM-472-8	1467-005	D6-502	811-005	1FM-25	Voltage Divider
C65	.005	6000	TCP-502-6K	7584-005			TVM-256	Vert. Sweep Coupling
C66	.005	6000	TCP-502-6K	7584-005			TVM-256	Vert. Sweep Coupling
C67	100	500	TCM-101-11	1468-0001	D6-101	GP1K-100	1FM-31	Hor. MV Feedback
C68	220	500	TCM-221-7	1468-00025	D6-221	GP2K-220	1FM-325	Hor. Sweep Coupling

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C69	.01	600	TCP-103-10	P688-01	D6-103	811-01	TM-11	Voltage Divider
C70	.0005	6000	TCP-501-6K	7584-0005			TVM-356	Hor. Sweep Coupling
C71	.0005	6000	TCP-501-6K	7584-0005			TVM-356	Hor. Sweep Coupling
C72	.05	600	TCP-503-10	P688-05			TM-15	HV Osc. Decoupling
C73	750	500	TCM-751-8	1464-00075	D6 751	GP2K-750	MS-37	Fixed Trimmer
C74	360	500	TCM-361-8	1469-00035				Fixed Trimmer
C75	360		TCM-361-10	GP360M	D6-391	GP2K-390	1FM-335	HV Osc. Grid Cap.
C76	.0005	6000	TCP-501-6K				TVM-356	HV Filter
C77	.0005	6000	TVP-501-6K				TVM-356	HV Filter
C78	.1	600	TCP-104-10	P688-1			TM 1	HV Osc. Fil. Bypass
C79	.05	600	TCP-503-10	P688-05			TM-15	Line Filter
C80	.01	600	TCP-103-10	P688-01	D6-103	811-01	TM-11	Cent. Cont. Bypass

* Not used in all models.
† Some sets have C2A and C2B interchanged.
‡ Some sets have C3, C5A, and C5B combined into one unit obtainable under MFGR'S Part No. TCE-107D.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	TVC-100-D	Q13-133	M-60-Z	B-60-S	Volume control
B	Switch			76-1	SW A	Not Req.	Attach to R1A per instructions
R2A	1000Ω	½		B11-108 *			Contrast control-panel
B	25KΩ		TVC-101-D	B11-120 *	TVC-101-D		Brightness control -rear
C	Shaft End			E-187 *			Attach per instructions in "Concentrikit"
R3A	1 Meg.	½		B11-137 *			Vert. hold control-panel
B	500KΩ		TVC-516-D	B11-133 *	TVC-516-D		Horiz. hold control-rear
C	Shaft End			E-187 *			Attach per instructions in "Concentrikit"
R4A	10 Meg.	½	TVC-104-D	Q11-143	AM-86-S	AN-98	Height control
B	Shaft		Not Req.	RQ	KSS-3 #	AK-1	Attach to R4A per instructions
R5A	10 Meg.	½	TVC-104-D	Q11-143	AM-86-S	AN-98	Vert. linearity control
B	Shaft		Not Req.	RQ	KSS-3 #	AK-1	Attach to R5A per instructions
R6	5 Meg.	½	TVC-514-D		TVC-514-D		Horiz. centering control, tapped @ 2.5 Meg.
R7	5 Meg.	½	TVC-514-D		TVC-514-D		Vert. centering control, tapped @ 2.5 Meg.
R8A	2.5 Meg.	½	TVC-513-D	Q11-239	TVC-513-D	AN-83	Focus control
B	Shaft		Not Req.	TQ #		AK-19 #	Attach to R8A per instructions

* Additional parts to be used with "Concentrikit".
# File slot in shaft to duplicate original.

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ARE ± 20% UNLESS OTHERWISE STATED
R9	330Ω 10%	½	TRC-331-2		RF Cathode
R10	56Ω 10%	½	TRC-560-2		Parasitic Supp.
R11	1000Ω	½	TRC-102-1	BTS-1000	RF Decoupling
R12	4700Ω 10%	½	TRC-472-3		Mixer Grid Coil Shunt
R13	1 Meg.	½	TRC-105-1		Mixer Grid
R14	1000Ω 5%	½	TRC-102-1	BTS-1000	Mixer Decoupling
R15	27KΩ 10%	½	TRC-273-1		Osc. Grid
R16	27KΩ	½	TRC-274-1		Osc. Grid
R17	47Ω	½	TRC-470-1		Osc. Cathode
R18	1000Ω	½	TRC-102-1	BTS-1000	Osc. Plate
R19	11KΩ 5%	½	TRC-113-3		1st Video IF Grid
R20	68Ω 10%	½	TRC-680-2		1st Video IF Cathode
R21	150Ω	½	TRW-151-1	BW-½-150	1st Video IF Decoupling-Wire Wound
R22	150Ω	½	TRC-151-1		AGC Network
R23	10KΩ 5%	½	TRC-103-3	BTS-10K-5%	2nd Video IF Grid
R24	68Ω 10%	½	TRC 680-2		2nd Video IF Cathode
R25	150Ω	½	TRC-151-1		AGC Network
R26	11KΩ 5%	½	TRC-113-3		3rd Video IF Grid
R27	68Ω 10%	½	TRC-680-2		3rd Video IF Cathode
R28	1.8 Meg.	½	TRC-185-1	BTS-1.8 Meg.	AGC Network
R29	47KΩ	½	TRC-473-1	BTS-47K	AGC Rect. Load
R30	1500Ω 10%	½	TRC-152-2	BTS-1500	Delayed AGC Network
R31	100KΩ 10%	½	TRC-104-2	BTS-100K	Voltage Divider
R32	8200Ω 5%	½	TRC-822-3	BTS-8200-5%	Video Det. Diode Load
R33	1 Meg.	½	TRC-105-1	BTS-1 Meg.	Video Amp. Grid
R34	6800Ω 5%	1	TRC-682-3	BTS-6800-5%	Video Amp. Plate
R35	10KΩ	½	TRC-103-1	BTS-10K	Isolation
R36	100KΩ	½	TRC-104-1	BTS-100K	Voltage Divider
R37	1 Meg.	½	TRC-105-1	BTS-1 Meg.	Sync. Sep. Grid
R38	100KΩ	½	TRC-104-1	BTS-100K	Bias Network
R39	220KΩ	½	TRC-224-1	BTS-220K	Sync. Sep. Plate Load
R40	470KΩ	½	TRC-474-1	BTS-470K	DC Rest. Load
R41	470KΩ	½	TRC-474-1	BTS-470K	Picture Tube Grid
R42	68Ω 10%	½	TRC-680-2		Sound IF Cathode
R43	470Ω	½	TRC-471-1	BTS-470	Sound IF Decoupling-See Note 1
R44	220Ω 10%	½	TRC-221-2		Balancing
R45	220Ω 10%	½	TRC-221-2		Balancing
R46	15KΩ 5%	½	TRC-153-3	BTS-15K-5%	Ratio Det. Diode Load
R47	15KΩ 5%	½	TRC-153-3	BTS-15K-5%	Ratio Det. Diode Load
R48	10 Meg.	½	TRC-106-1	BTS-10 Meg.	AF Grid
R49	390KΩ	½	TRC-394-1	BTS-390K	AF Plate
R50	6.8 Meg.	½	TRC-685-1	BTS-6.8 Meg.	Bias Network-See Note 1
R51	470KΩ	½	TRC-474-1	BTS-470K	Output Grid
R52	150Ω	½	TRW-151-1	BW-½-150	Output Cathode-See Note 1-Wire Wound
R53	180KΩ	½	TRC-184-1	BTS-180K	Voltage Divider
R54	100KΩ	½	TRC-102-1	BTS-1000	Bias Network
R55	4700Ω	½	TRC-472-1	BTS-4700	Integrator Network
R56	4700Ω	½	TRC-472-1	BTS-4700	Integrator Network
R57	1000Ω	1	TRC-102-1	BTA-1000	Vert. MV Cathode
R58	100KΩ	½	TRC-104-1	BTS-100K	Vert. MV Plate
R59	390KΩ	½	TRC-394-1	BTS-390K	Vert. MV Grid
R60	2.2 Meg. 5%	½	TRC-225-1	BTS-2.2 Meg. 5%	Vert. MV Plate

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R61	10 Meg.	½	TRC-106-1	BTS-10 Meg.	Voltage Divider
R62	2.2 Meg. 10%	1	TRC-225-4	BTA-2.2 Meg.	Voltage Divider
R63	10 Meg.	½	TRC-106-1	BTS-10 Meg.	Vert. Amp. Grid
R64	10 Meg.	½	TRC-106-1	BTS-10 Meg.	Vert. Amp. Grid
R65	6.8 Meg. 10%	1	TRC-685-5	BTA-6.8 Meg.	Vert. Amp. Plate
R66	6.8 Meg. 10%	1	TRC-685-1	BTA-6.8 Meg.	Vert. Amp. Plate
R67	5.6 Meg.	½	TRC-565-1	BTS-5.6 Meg.	Vert. Deflection Load
R68	5.6 Meg.	½	TRC-565-1	BTS-5.6 Meg.	Vert. Deflection Load
R69	2.2 Meg. 5%	½	TRC-225-1	BTS-2.2 Meg. 5%	Voltage Divider
R70	27KΩ 10%	½	TRC-273-2	BTS-27K	Horiz. MV Grid
R71	3900Ω 10%	1	TRC-392-2	BTA-3900	Horiz. MV Cathode
R72	100KΩ	½	TRC-104-1	BTS-100K	Horiz. MV Plate
R73	150KΩ	½	TRC-154-1	BTS-150K	Horiz. MV Grid
R74	6.8 Meg.	½	TRC-685-1	BTS-6.8 Meg.	Horiz. MV Plate
R75	4.7 Meg.	½	TRC-475-1	BTS-4.7 Meg.	Voltage Divider
R76	4.7 Meg.	½	TRC-475-1	BTS-4.7 Meg.	Voltage Divider
R77	3.3 Meg.	½	TRC-335-1	BTS-3.3 Meg.	Voltage Divider
R78	1 Meg.	½	TRC-105-1	BTS-1 Meg.	Horiz. Amp. Grid
R79	1 Meg.	½	TRC-105-1	BTS-1 Meg.	Horiz. Amp. Grid
R80	1200Ω	½	TRC-122-1	BTS-1200	Horiz. Amp. Plate
R81	4.7 Meg.	½	TRC-475-1	BTS-4.7 Meg.	Horiz. Deflection Load
R82	4.7 Meg.	½	TRC-475-1	BTS-4.7 Meg.	Horiz. Deflection Load
R83	18KΩ 10%	1	TRC 183-5	BTA-18K	HV Osc. Grid
R84	68Ω	½	TRC-680-1		Parasitic Supp.
R85	68Ω	½	TRC-680-1		Parasitic Supp. -See Note 1
R86	100KΩ 5%	1	TRC-104-4		HV Filter
R87	86Ω 10%	2	TRW-860-8		Filament Shunt-Wire Wound
R88	18Ω 10%	5	TRW-180-11		Filament Dropping-Wire Wound
R89	1200Ω 10%	1	TRW-122-4	BW-1-1200	Bias Network-Wire Wound
R90	680Ω 10%	2	TRW-681-8	BW-2-680	Filter-Wire Wound
R91	18Ω 10%	5	TRW-180-11		Surge Limiter-Wire Wound
R92	1 Meg.	½	TRC-105-1	BTS-1 Meg.	Voltage Divider
R93	3.3 Meg.	½	TRC-335-1	BTS-3.3 Meg.	Voltage Divider
R94	2.2 Meg. 10%	1	TRC-225-4		Voltage Divider
R95	2.2 Meg. 10%	1	TRC-225-4		Voltage Divider
R96	2.2 Meg. 10%	1	TRC-225-4		Voltage Divider
R97	2.2 Meg. 10%	1	TRC-225-4		Voltage Divider
R98	1 Meg.	½	TRC-105-1	BTS-1 Meg.	Voltage Divider

Note 1. Not used in all models.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA: TELE TONE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	NOTES
T1	1080Ω CT and 375Ω CT		TTR-160-1D				Hor. Output Choke

TRANSFORMER (H.V. OSC.)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T2	1.1Ω	750Ω	25Ω	0Ω	TLF-137-D			

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	INSTALLATION NOTES
T3	3.1KΩ	3.5Ω	210Ω	.5Ω	Part of TSP-41-8	A-3332	A-3025		

SPEAKER

ITEM No.	RATINGS FIELD RES.	RATINGS V. C. IMP.	REPLACEMENT DATA: TELE TONE PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA: QUAM PART No.	NOTES
SP1	PM	3.5Ω	TSP-41-8	ST-113 ① MOD. P4-X	4A1 ①	① Remount output transformer.
	CONE DIA.	V. C. DIA.				
SP2	3 7/8"	9/16"				

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE (0 CURRENT 1000 ↩)	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	INSTALLATION NOTES
L1	.139A	76Ω	1.5 Henries	TTR-178-1D		C-2994		

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

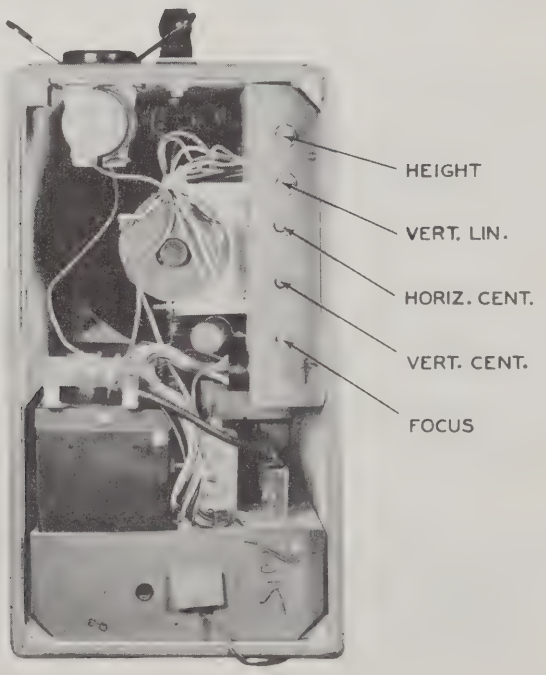
ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	TELE-TONE PART No.	MEISSNER PART No.	
L2	RF Choke	3.5Ω		TLF-140-D		
L3	RF End Inductance	0Ω		TLF-143-D		
L4	RF End Inductance	0Ω		TLF-143-D		
L5A	Osc. Coil	0Ω		TLF-120-1D		Channel #2
B	Osc. Coil	0Ω		TLF-120-2D		Channel #3
C	Osc. Coil	0Ω		TLF-120-3D		Channel #4
D	Osc. Coil	0Ω		TLF-120-4D		Channel #5
E	Osc. Coil	0Ω		TLF-120-5D		Channel #6
F	Osc. Coil	0Ω		TLF-120-6D		Channel #7
G	Osc. Coil	0Ω		TLF-120-7D		Channel #8
H	Osc. Coil	0Ω		TLF-120-8D		Channel #9
I	Osc. Coil	0Ω		TLF-120-9D		Channel #10
J	Osc. Coil	0Ω		TLF-120-10D		Channel #11
K	Osc. Coil	0Ω		TLF-120-10D		Channel #12
L	Osc. Coil	0Ω		TLF-120-10D		Channel #13
L6	1st Video IF	.2Ω		TLF-147-D		
L7	2nd Video IF	.2Ω		TLF-147-D		
L8	Fil. Choke	.1Ω		TLF-144-D		
L9	3rd Video IF	.2Ω		TLF-148-D		
L10	Fil. Choke	.1Ω		TLF-144-D		
L11	4th Video IF	.2Ω		TLF-151-D		
L12	Peaking	10Ω		TLF-133-D		Wound on 33KΩ resistor.
L13	Peaking	17Ω		TLF-134-D		
L14	Peaking	6.5Ω		TLF-135-D		Wound on 22KΩ resistor.
L15	Peaking	14Ω		TLF-136-D		Wound on 15KΩ resistor.
L16	Sound IF	1.5Ω		TLF-114-D		
L17	Ratio Det. Trans.	7Ω	.1Ω	TLF-142-D		
L18	Cath. Choke	38Ω		TLF-528-D		

SELENIUM RECTIFIER

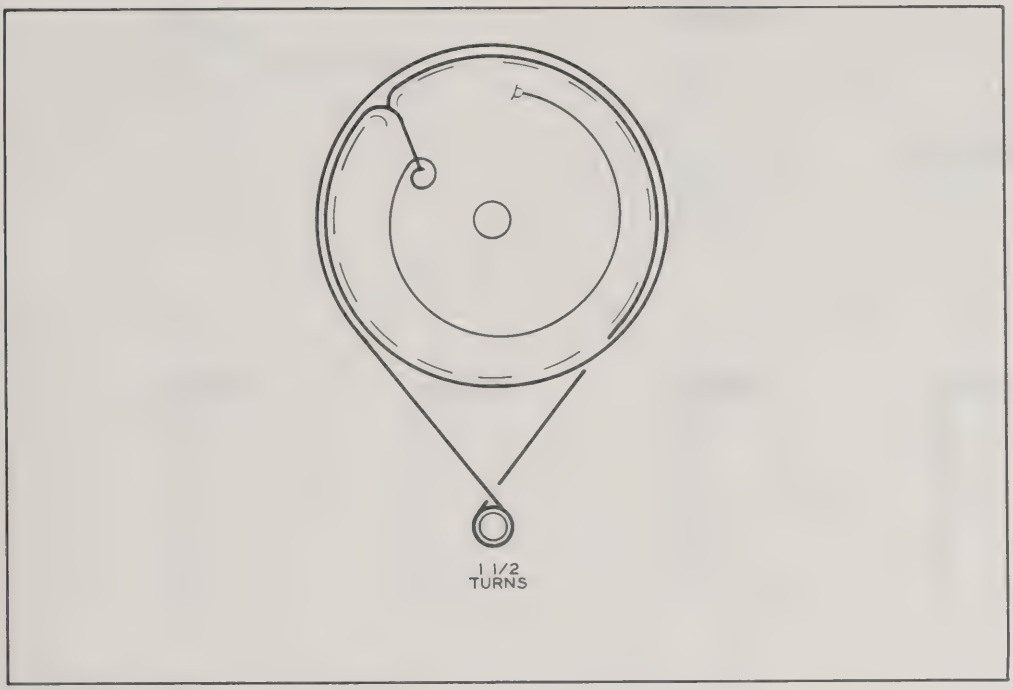
ITEM No.	RATING	REPLACEMENT DATA			NOTES
	CURRENT	TELE-TONE PART No.	SYLVANIA PART No.		
M1	.175A		NE-5		

MISCELLANEOUS

ITEM No.	PART NAME	TELE-TONE PART No.	NOTES
M2	RF Tuner Assembly		
M3	Trimmer	TAS-503-D	Fine tuning (2.5-4MMF) includes bushing.
M4	Switch	TSW-202	Interlock
	Trimmer	TCM-122-VAR	HV Padder (350-1200MMF)
	Cabinet	TCB-256-1D	Includes back
	Safety Glass	TGL-104-D	
	Knob	TKN-100	Outside (4 required)
	Knob	TKN-101	Inside (Small shaft) (2 required)
	Knob	TKN-103	Inside (Large shaft (1 required)
	Knob	TKN-108	Inside (Engraved) (1 required)
	Knob	TKN-111-D	Antenna Assembly
	Handle	THA 100	
	Antenna Assembly	TAS-527	Complete, Roto "V"



CABINET-REAR VIEW



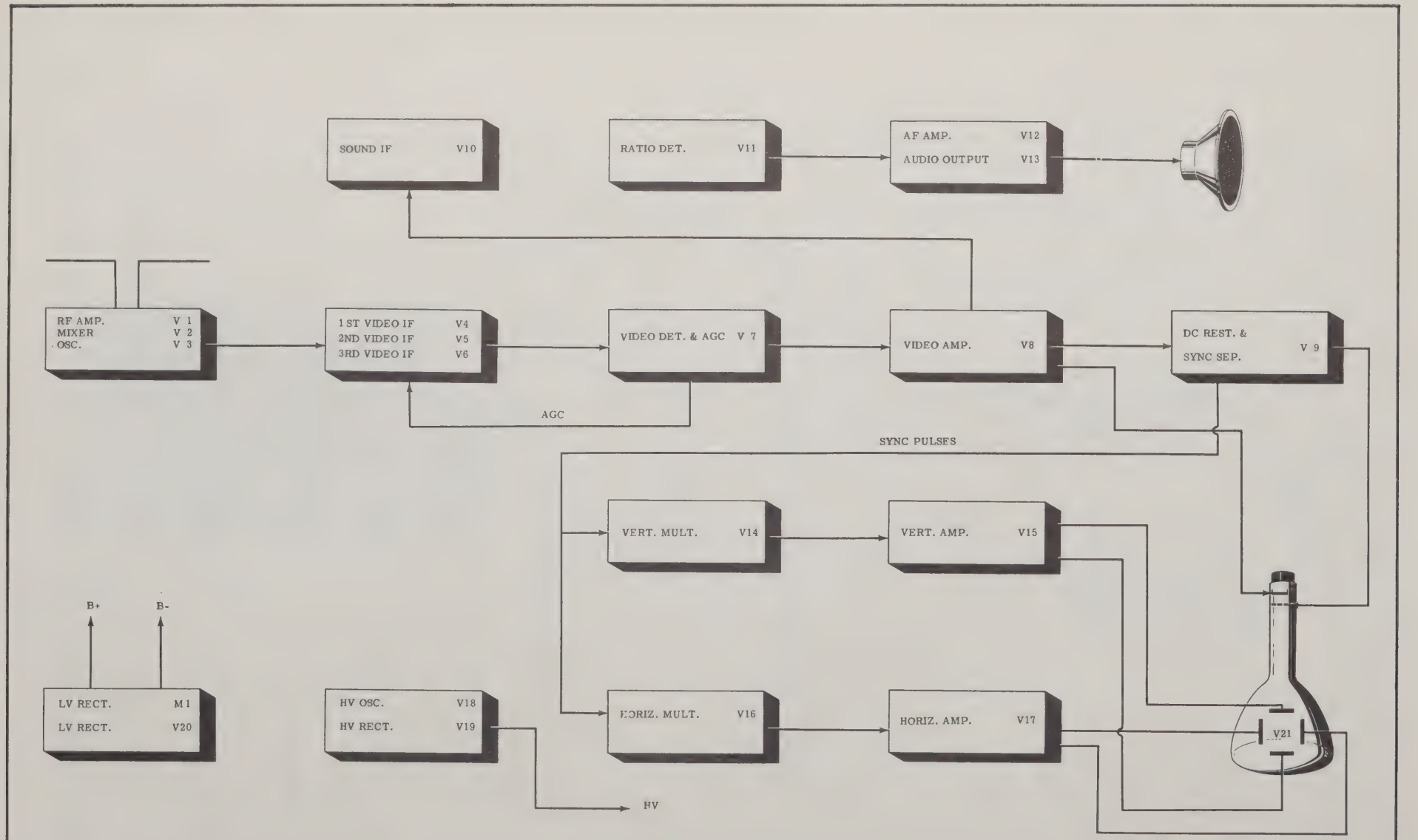
FINE TUNING DRIVE CORD STRINGING

DISASSEMBLY INSTRUCTIONS

1. Remove four push-on type control knobs.
2. Remove four screws holding rear cover. Remove cover.
3. Remove power plug from sweep chassis.
4. Remove HV cap.
5. Remove four phillips head screws holding antenna mounting. Push antenna to inside of cabinet.
6. Remove four 5/16" hex head bolts holding RF-IF chassis. Remove chassis.
7. Remove four phillips head screws holding top chassis. Remove chassis.

PICTURE SIZE ADJUSTMENT

The picture size trimmer (B1) which controls the high voltage is located in the high voltage power supply compartment and is used to adjust the picture to the proper horizontal width. Due to the interaction between the circuits, it will be necessary to adjust the height control when B1 is changed.



BLOCK DIAGRAM

PHOTOFACT* Folder

WESTINGHOUSE MODEL

H-609T10 (CH. V-2150-94C)

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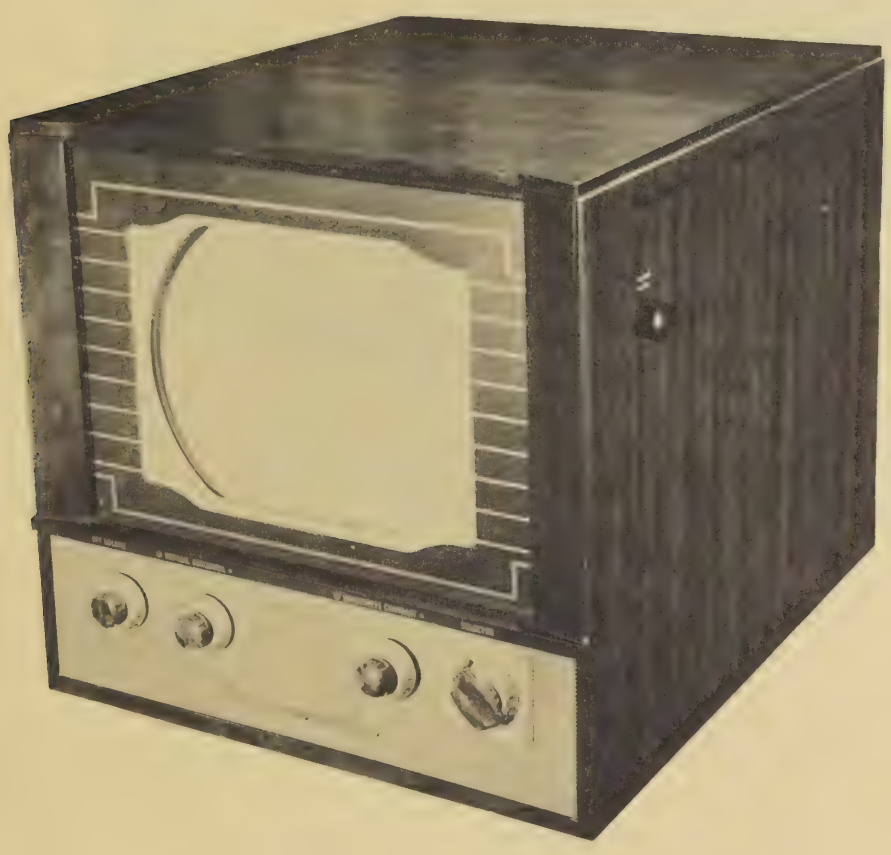

WESTINGHOUSE MODEL
H-609T10 (CH. V-2150-94C)

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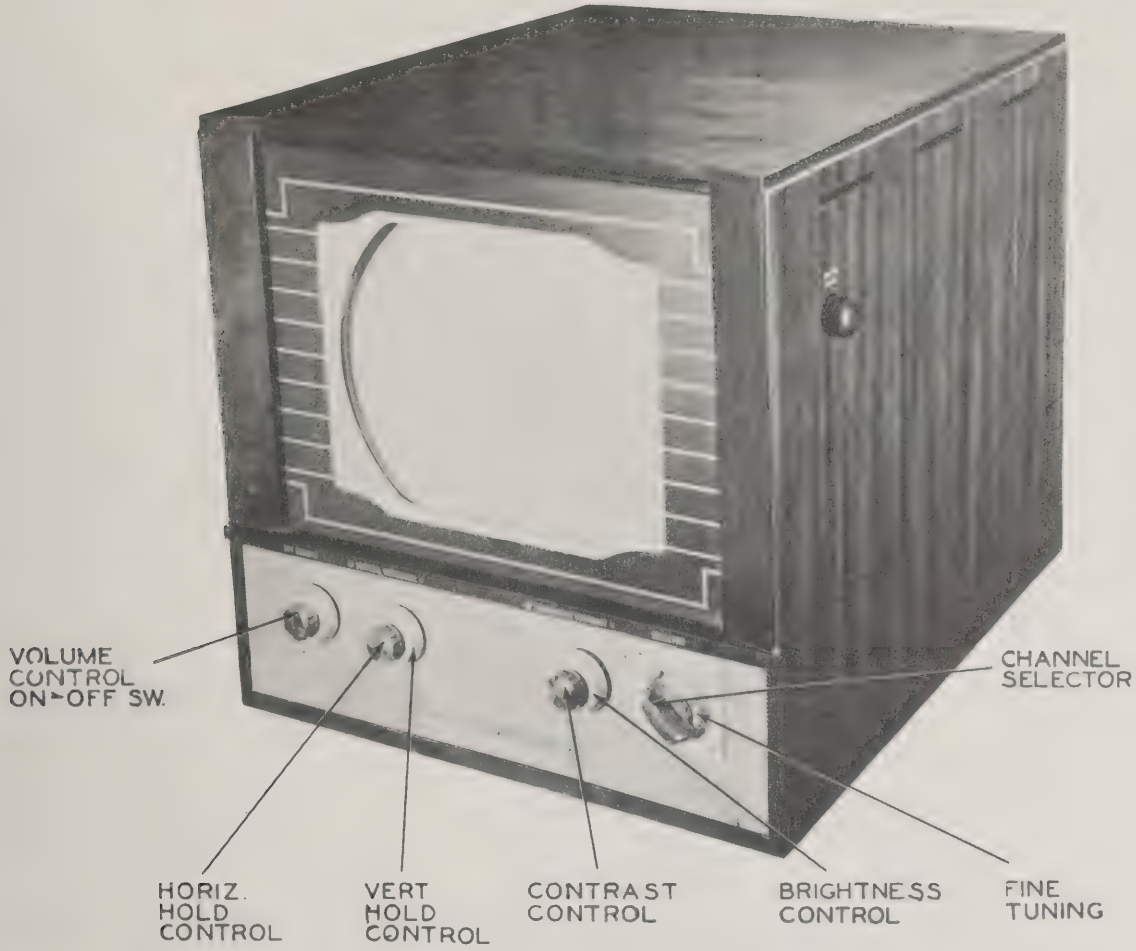
WESTINGHOUSE
MODEL H-609T10 (Ch. V-2150-94C)



WESTINGHOUSE
MODEL H-609T10 (Ch. V-2150-94C)

WESTINGHOUSE MODEL H-609T10

TRADE NAME	Westinghouse Model H-609T10 (Ch. V-2150-94C)
MANUFACTURER	Westinghouse Electric Corp., Receiver Div., Sunbury, Pa.
TYPE SET	Television Receiver
TUBES	Twenty Seven
POWER SUPPLY	110-120 Volts AC-60 Cycle
RATING	1.6 Amp. at 117 Volts AC
TUNING RANGE	Channels 2 thru 13

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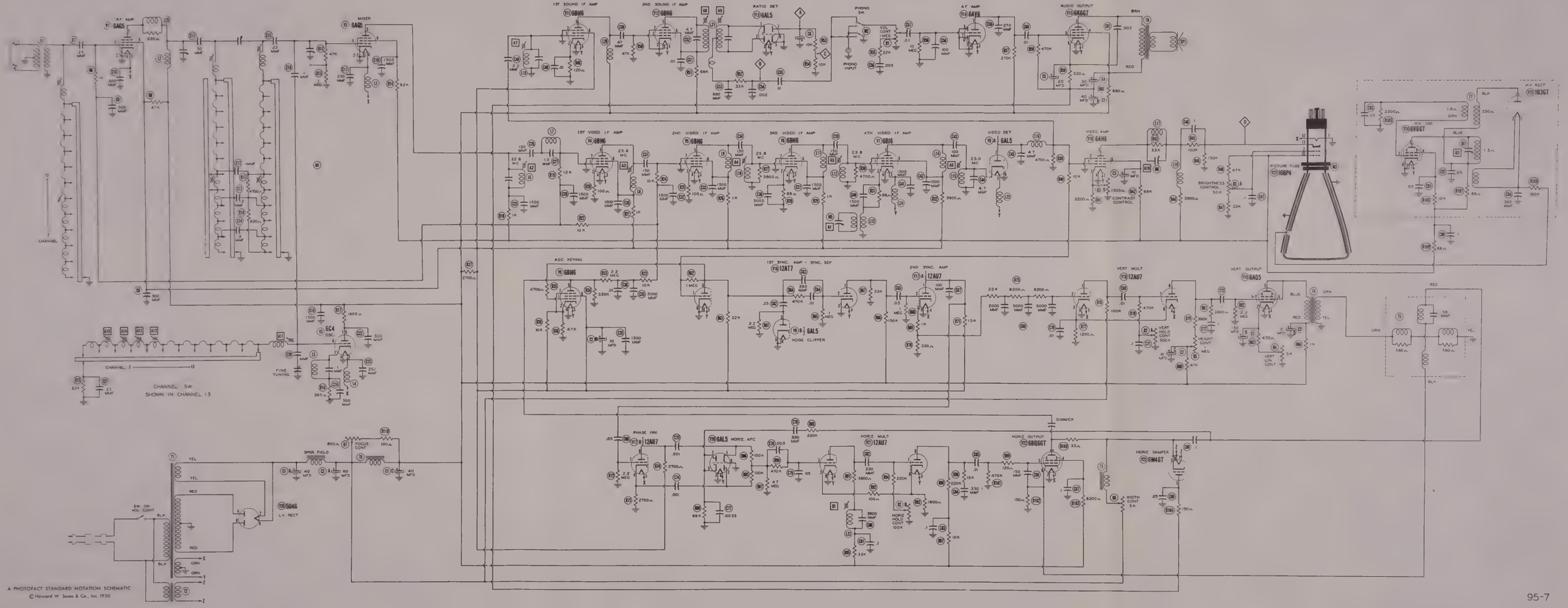
WESTINGHOUSE
MODEL H-609T1O (Ch. V-2150-94C)
95-7
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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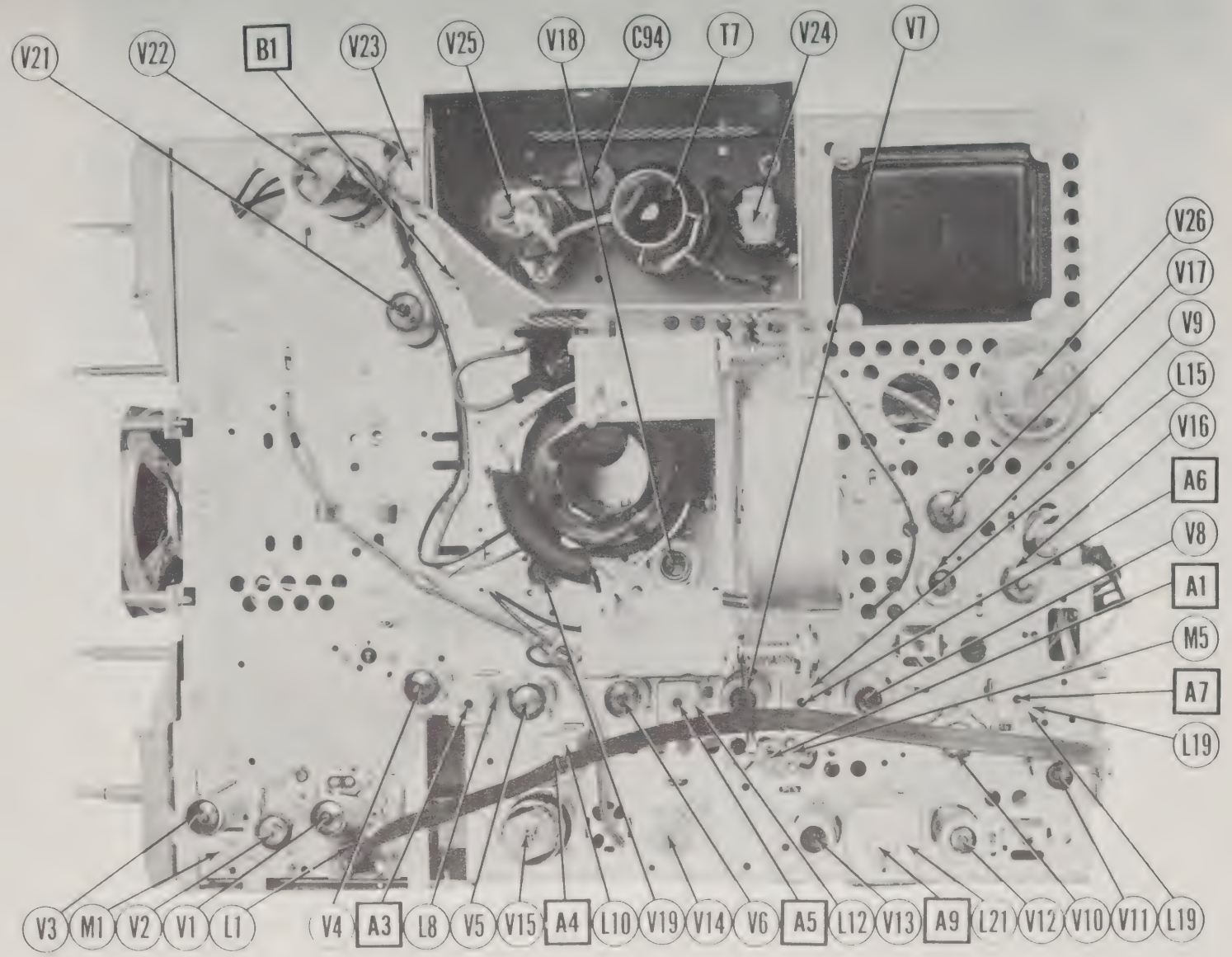
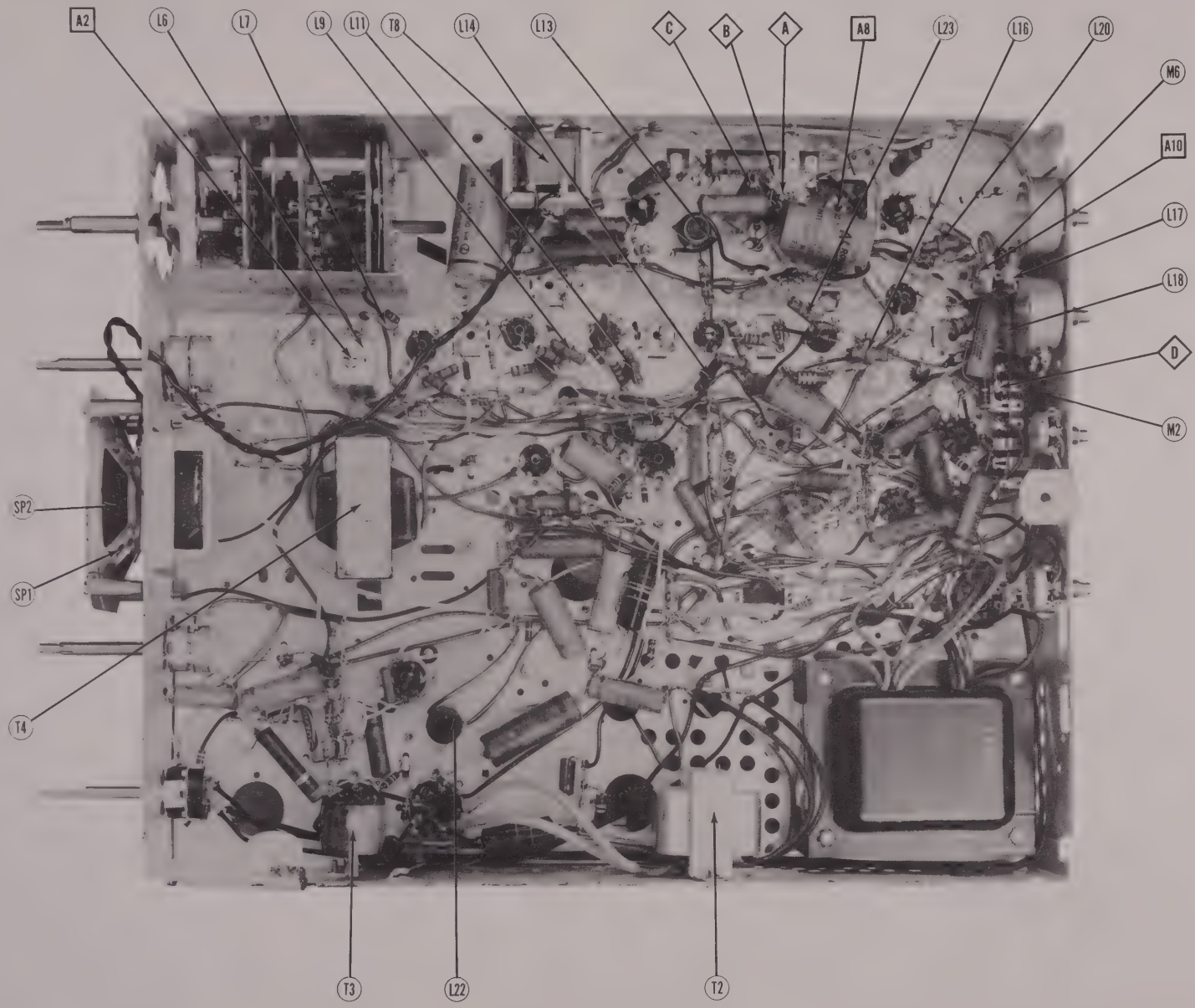
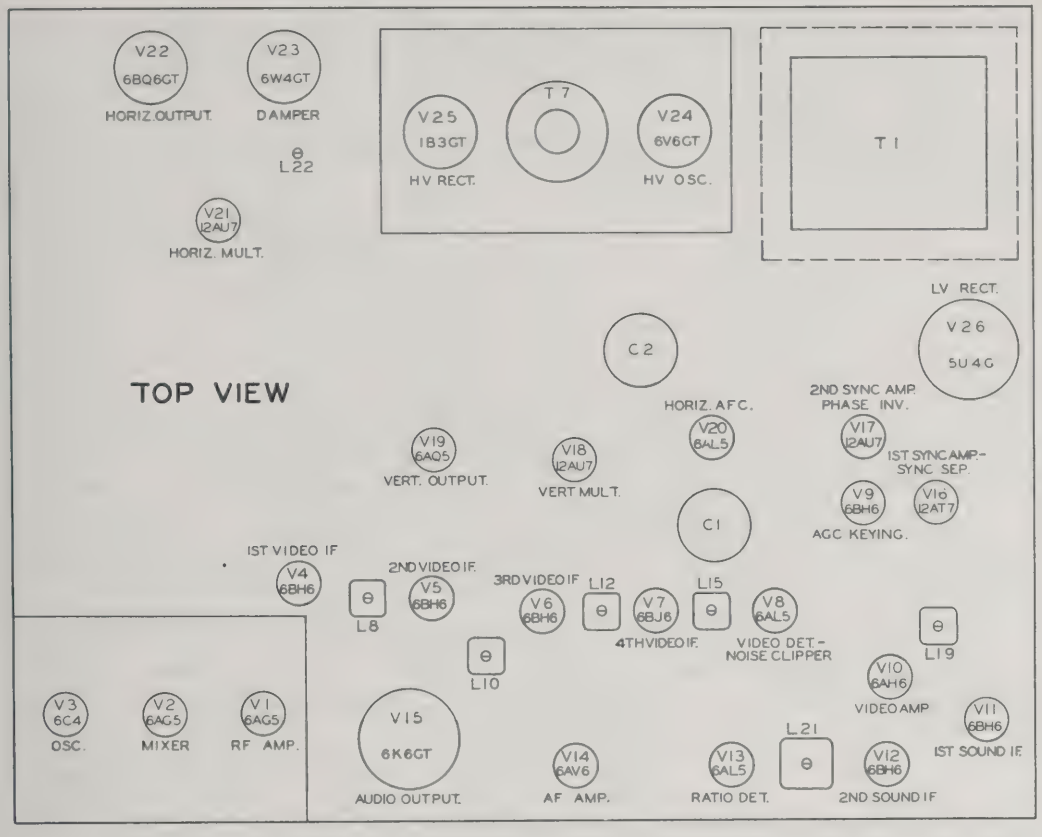
CHANNEL SW
SHOWN IN CHANNEL 13
1ST SOUND IF AMP
2ND SOUND IF AMP
RATIO DET
PHONO SW.
AF AMP
AUDIO OUTPUT
1ST VIDEO IF AMP
2ND VIDEO IF AMP
3RD VIDEO IF AMP
4TH VIDEO IF AMP
VIDEO DET
VIDEO AMP
AGC KEYING
1ST SYNC. AMP - SYNC. SEP
2ND SYNC. AMP
VERT MULT
VERT OUTPUT
PHASE INV.
HORIZ AFC
HORIZ MULT
HORIZ OUTPUT
HORIZ DAMPER
GIMMICK
PICTURE TUBE
BRIGHTNESS CONTROL
CONTRAST CONTROL
HEIGHT CONT
VERT HOLD CONT
VERT LIN CONT
HORIZ HOLD CONT
WIDTH CONT
FOCUS CONT
SPKR FIELD
SW ON VOL CONT
LV RECT
HV RECT
HV OSC
NOISE CLIPPER
FINE TUNING
CHANNEL

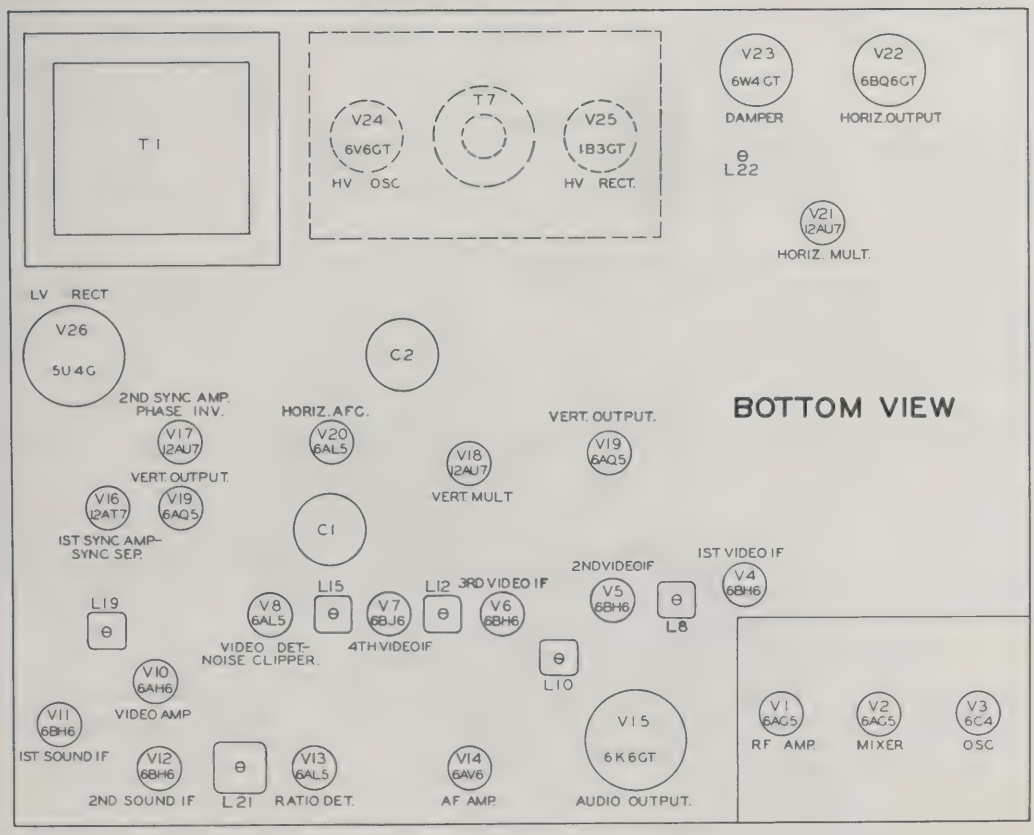


CHASSIS-TOP VIEW



CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION





TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the high voltage oscillator tube V24 from its socket.

VIDEO IF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	21.6MC (Unmod.)	3	DC Probe to "Video test jack". Common to chassis.	A1	Adjust for MINIMUM deflection.
2.	Direct	"	22.6MC	"	"	A2	Adjust for maximum deflection. Attenuate signal generator to maintain 2 volt reading.
3.	Direct	"	25.9MC	"	"	A3	"
4.	Direct	"	25.6MC	"	"	A4	"
5.	Direct	"	23.8MC	"	"	A5	"
6.	Direct	"	23MC	"	"	A6	"

OVERALL VIDEO IF RESPONSE CHECK

Remove the local oscillator tube (V3) from its socket to prevent erroneous indications.
Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.
Connect a 200KΩ resistor in series with the oscilloscope vertical amplifier input lead, and connect a 500MMF capacitor across the vertical amplifier input terminal and low side terminal at the oscilloscope end of the input cable.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	25MC (10MC SWP)	21.6MC 22.5MC 23.5MC 25.3MC 26.1MC	Any	Vert. Amp. to "Video test jack". Low side to chassis.		Check for response curve similar to fig 1. If necessary retouch A1 thru A6 for optimum response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8.	.001MFD	High side to "Video test jack". Low side to chassis.	4.5MC (Unmod.)	Any	DC Probe to Point (A). Common to chassis.	A7, A8	Adjust for maximum deflection.
9.	.001MFD	"	"	"	DC Probe to Point (B). Common to chassis.	A9	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated asignal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	.001MFD	High side to "video test jack". Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any	Vert. Amp. to Point (A). Low side to chassis.	A7, A8	Disconnect stabilizer capacitor C6. Adjust for maximum amplitude and symmetry as per Fig 2. Reconnect capacitor C6.
9.	.001MFD	"	"	"	"	Vert. Amp. to Point (B). Low side to chassis.	A9	Adjust A9 so 4.5MC occurs at center of crossover lines as per Fig 3. Slightly retouch A8 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	.001MFD	High side to "Video test jack". Low side to chassis.	Not used	4.5MC (400 ∿ Mod.)	Any	Vert. Amp. thru detector probe (Fig 4) to Point (D). Low side to chassis.	A10	Adjust for minimum 400 ∿ indication on scope.

OSCILLATOR ALIGNMENT (TUNER #V-8215)

THE RF AND MIXER ADJUSTMENTS IN THIS TUNER HAVE BEEN PRE-SET AT THE FACTORY AND ARE VERY STABLE. THEY SHOULD NOT REQUIRE ALIGNMENT IN THE FIELD.
Replace the local oscillator tube (V3) in its socket.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	Two 120Ω carbon res.	Across antenna terminals with 120Ω in each lead.	213MC (10MC SWP)	211.25MC 215.75MC	13	Vert. Amp. to " Video test jack". Low side to chassis.	A11	Adjust to place sound marker as shown in Fig 5. The video marker should be at 50%.
12.	"	"	207MC (10MC SWP)	205.25MC 209.75MC	12	"		Check to set that the sound marker can be properly placed with the fine tuning control. If the sound marker can not be properly placed well within the range of the fine tuning control on all high band channels, make compromise adjustment of A11.
			201MC (10MC SWP)	199.25MC 203.75MC	11			
			195MC (10MC SWP)	193.25MC 197.75MC	10			
			189MC (10MC SWP)	187.25MC 191.75MC	9			
			183MC (10MC SWP)	181.25MC 185.75MC	8			
			177MC (10MC SWP)	175.25MC 179.75MC	7			
13.	"	"	85MC (10MC SWP)	83.25MC 87.75MC	6		A12	Adjust to place sound marker as shown in figure 5.
			79MC (10MC SWP)	77.25MC 81.75MC	5		A13	
			69MC (10MC SWP)	67.25MC 71.75MC	4		A14	
			63MC (10MC SWP)	61.25MC 65.75MC	3		A15	
14.	"	"	57MC (10MC SWP)	55.25MC 59.75MC	2	"		Check to see that the sound marker can be properly placed with the fine tuning control.

ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT (TUNER #V-5406)

THE RF AND MIXER ADJUSTMENTS IN THIS TUNER ARE PRE-SET AT THE FACTORY AND ARE VERY STABLE. THEY SHOULD NOT REQUIRE ALIGNMENT IN THE FIELD.

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
15.	Two 120Ω carbon res.	Across antenna terminals with 120Ω in each lead.	213MC (10MC SWP) 207MC (10MC SWP) 201MC (10MC SWP) 195MC (10MC SWP) 189MC (10MC SWP) 183MC (10MC SWP) 177MC (10MC SWP) 85MC (10MC SWP) 79MC (10MC SWP) 69MC (10MC SWP) 63MC (10MC SWP) 57MC (10MC SWP)	211.25MC 215.75MC 205.25MC 209.75MC 199.25MC 203.75MC 193.25MC 197.75MC 187.25MC 191.75MC 181.25MC 185.75MC 175.25MC 179.75MC 83.25MC 87.75MC 77.25MC 81.75MC 67.25MC 71.75MC 61.25MC 65.75MC 55.25MC 59.75MC	13 12 11 10 9 8 7 6 5 4 3 2	Vert. Amp. to "Video test jack". Low side to chassis.	A16 A17 A18 A19 A20 A21 A22 A23 A24 A25 A26 A27	Adjust to place sound marker as shown in figure 5. The video marker should be at 50%.

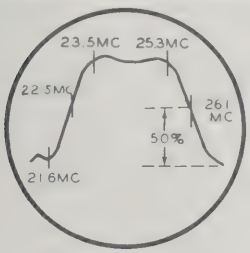


FIG.1

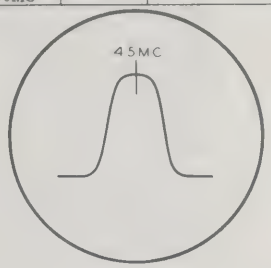


FIG. 2

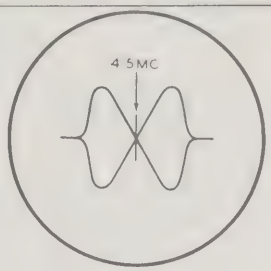


FIG. 3

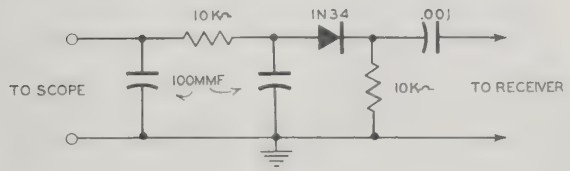


FIG. 4

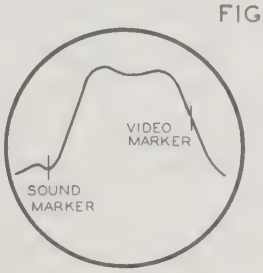
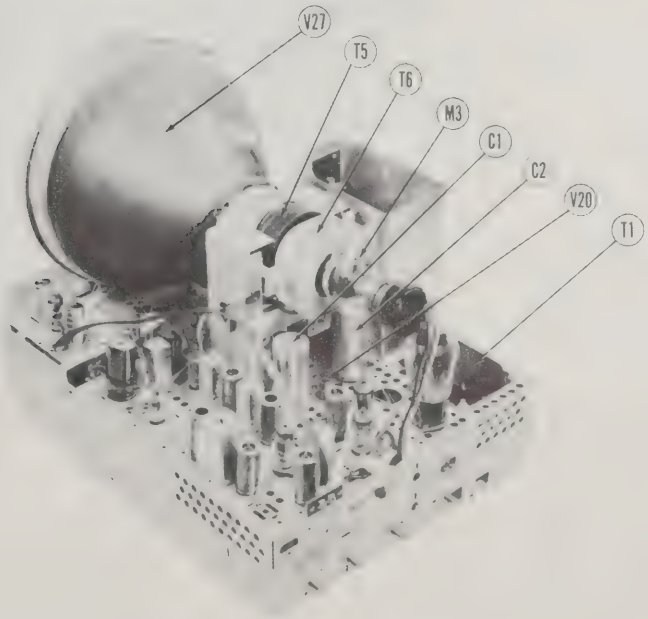


FIG.5



CHASSIS-TOP VIEW

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	-2.8VDC	0V.	6.3VAC	0V.	240VDC	135VDC	0V.		
V 2	6AG5	0V.	0V.	0V.	6.3VAC	240VDC	230VDC	0V.		
V 3	6C4	205VDC	0V.	6.3VAC	0V.	205VDC	§-3.4VDC	5.5VDC		
V 4	6BH6	-1.7VDC	.5VDC	6.3VAC	0V.	110VDC	110VDC	0V.		
V 5	6BH6	-.4VDC	.5VDC	6.3VAC	0V.	110VDC	110VDC	0V.		
V 6	6BH6	0V.	.4VDC	6.3VAC	0V.	110VDC	110VDC	0V.		
V 7	6BJ6	0V.	.6VDC	6.3VAC	0V.	75VDC	75VDC	0V.		
V 8	6AL5	0V.	-.3VDC	6.3VAC	0V.	0V.	0V.	-.5VDC		
V 9	6BH6	55VDC	95VDC	6.3VAC	0V.	-.1VDC	115VDC	95VDC		
V 10	6AH6	-.2VDC	0V.	6.3VAC	0V.	225VDC	195VDC	3.4VDC		
V 11	6BH6	0V.	.8VDC	0V.	6.3VAC	230VDC	115VDC	0V.		
V 12	6BH6	-.4VDC	0V.	0V.	6.3VAC	50VDC	50VDC	0V.		
V 13	6AL5	-1.1VDC	-.4VDC	0V.	6.3VAC	0V.	0V.	-1.4VDC		
V 14	6AV6	-.4VDC	0V.	6.3VAC	0V.	0V.	0V.	90VDC		
V 15	6K6GT	0V.	6.3VAC	▲140VDC	▲150VDC	▲.9VDC	▲.9VDC	0V.	▲12VDC	
V 16	12AU7	35VDC	-1VDC	0V.	6.3VAC	6.3VAC	55VDC	-.1VDC	0V.	0V.
V 17	12AU7	80VDC	0V.	3.5VDC	6.3VAC	6.3VAC	110VDC	0V.	7.5VDC	0V.
V 18	12AU7	60VDC	.7VDC	3VDC	6.3VAC	6.3VAC	80VDC 43VDC	-16.5VDC	3VDC	0V.
V 19	6AQ6	0V.	11VDC 26VDC	6.3VAC	0V.	220VDC	220VDC	0V.		
V 20	6AL5	5.8VDC	-8VDC	0V.	6.3VAC	0V.	0V.	0V.		
V 21	12AU7	140VDC	-.2VDC	5.7VDC	6.3VAC	6.3VAC	75VDC	-1.6VDC	5.5VDC	0V.
V 22	6BQ6GT	0V.	0V.	0V.	140VDC	-6VDC	-6VDC	6.3VAC	60VDC	TOP CAP *
V 23	6W4GT	0V.	215VDC	215VDC	0V.	60VDC	65VDC	215VDC	215VDC	
V 24	6V6GT	0V.	0V.	230VDC	95VDC	-12VDC	-12VDC	6.3VAC	0V.	
V 25	1B3GT	* DO NOT MEASURE.								
V 26	5U4G	0V.	295VDC	0V.	290VAC	0V.	290VAC	0V.	295VDC	
V 27	10BP4	0V.	38VDC	PIN 10 230VDC	PIN 11 130VDC	PIN 12 6.3VAC				

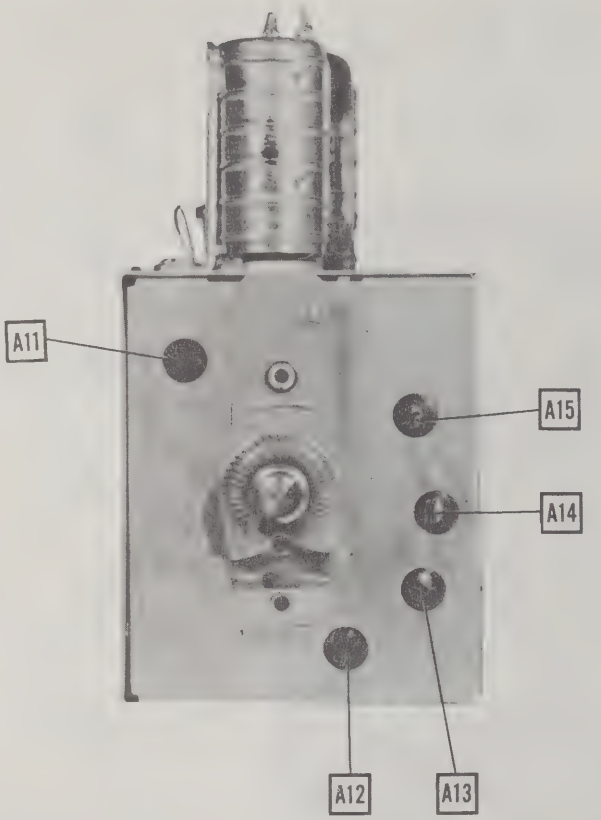
NOTE: FOCUS CONTROL IN FULLY COUNTERCLOCKWISE POSITION.
§ TAKEN WITH VACUUM TUBE VOLTMETER.
* DO NOT MEASURE.
▲ MEASURED FROM PIN 5 OF V23.

RESISTANCE READINGS

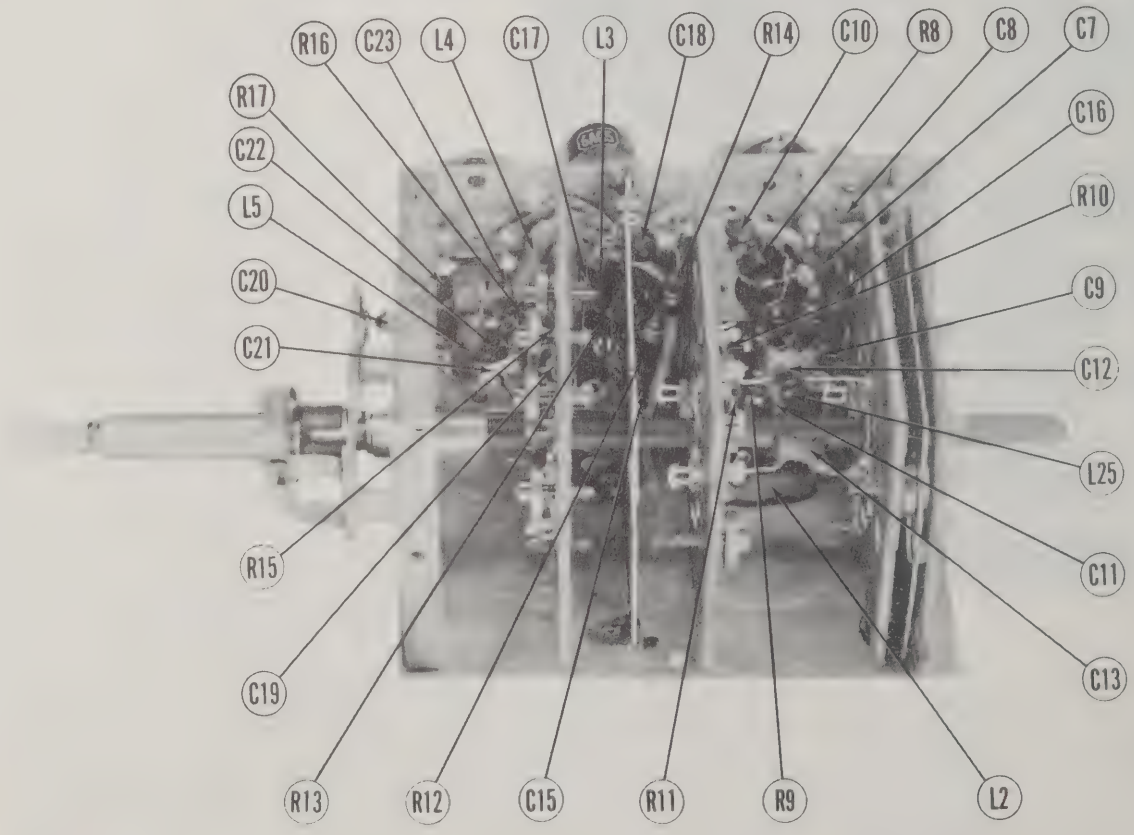
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	2.2 Meg.	0Ω	.1Ω	0Ω	†220Ω	†2.7KΩ	0Ω		
V 2	6AG5	1 Meg.	0Ω	0Ω	.1Ω	†1.2KΩ	†80KΩ	0Ω		
V 3	6C4	†2KΩ	Inf.	.1Ω	0Ω	†2KΩ	22KΩ	390Ω		
V 4	6BH6	2.5 Meg.	100Ω	.1Ω	0Ω	†3.8KΩ	†3.8KΩ	0Ω		
V 5	6BH6	2.5 Meg.	100Ω	.1Ω	0Ω	†3.8KΩ	†3.8KΩ	0Ω		
V 6	6BH6	.1Ω	68Ω	.1Ω	0Ω	†3.8KΩ	†3.8KΩ	0Ω		
V 7	6BJ6	.1Ω	68Ω	1Ω	0Ω	†6.7KΩ	†6.7KΩ	0Ω		
V 8	6AL5	.1Ω	2.2 Meg.	1Ω	0Ω	0Ω	0Ω	4.7KΩ		
V 9	6BH6	†28KΩ	†9KΩ	.1Ω	0Ω	330KΩ	†2.8KΩ	†1KΩ		
V 10	6AH6	4.7KΩ	0Ω	.1Ω	0Ω	†3.6KΩ	†68KΩ	2.2KΩ		
V 11	6BH6	1.9Ω	120Ω	0Ω	.1Ω	†250Ω	†2.8KΩ	0Ω		
V 12	6BH6	47KΩ	0Ω	0Ω	.1Ω	†68KΩ	†68KΩ	0Ω		
V 13	6AL5	Inf.	Inf.	0Ω	.1Ω	0Ω	0Ω	20KΩ		
V 14	6AV6	10 Meg.	0Ω	.1Ω	0Ω	0Ω	0Ω	†270KΩ		
V 15	6K6GT	Inf.	.1Ω	†1.4KΩ	†1000Ω	▲470KΩ	▲470KΩ	0Ω	▲330Ω	
V 16	12AU7	†46KΩ	1 Meg.	0Ω	.1Ω	.1Ω	†25KΩ	10KΩ	0Ω	0Ω
V 17	12AU7	†18KΩ	1 Meg.	1.3KΩ	.1Ω	.1Ω	†5.6KΩ	2.2 Meg.	2.7KΩ	0Ω
V 18	12AU7	†100KΩ	38KΩ	1.2KΩ	.1Ω	.1Ω	†440KΩ †1.3 Meg.	470KΩ	1.2KΩ	0Ω
V 19	6AQ5	2.2 Meg.	5.5KΩ 470Ω	.1Ω	0Ω	†1.8KΩ	†1.8KΩ	2.2 Meg.		
V 20	6AL5	4.8 Meg.	4.8 Meg.	0Ω	.1Ω	68KΩ	0Ω	68KΩ		
V 21	12AU7	†39KΩ	5 Meg.	1.9KΩ	.1Ω	.1Ω	†230KΩ	220KΩ	1.8KΩ	0Ω
V 22	6BQ6GT	Inf.	0Ω	Inf.	†8.2KΩ	470KΩ	470KΩ	.1Ω	150Ω	†500Ω †5.5KΩ
V 23	6W4GT	Inf.	†500Ω †5.5KΩ	†500Ω †5.5KΩ	Inf.	▲0Ω	▲150Ω	†500Ω †5.5KΩ	†500Ω †5.5KΩ	
V 24	6V6GT	0Ω	0Ω	†380Ω	†10KΩ	2.2KΩ	2.5KΩ	.1Ω	0Ω	
V 25	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP †900Ω
V 26	5U4G	Inf.	30KΩ	Inf.	40Ω	Inf.	40Ω	Inf.	30KΩ	
V 27	10BP4	0Ω	20KΩ	PIN 10 †200Ω	PIN 11 60KΩ	PIN 12 .1Ω				

NOTE: FOCUS CONTROL IN FULLY COUNTERCLOCKWISE POSITION.
† MEASURED FROM PIN 8 OF V26.
▲ MEASURED FROM PIN 5 OF V23.

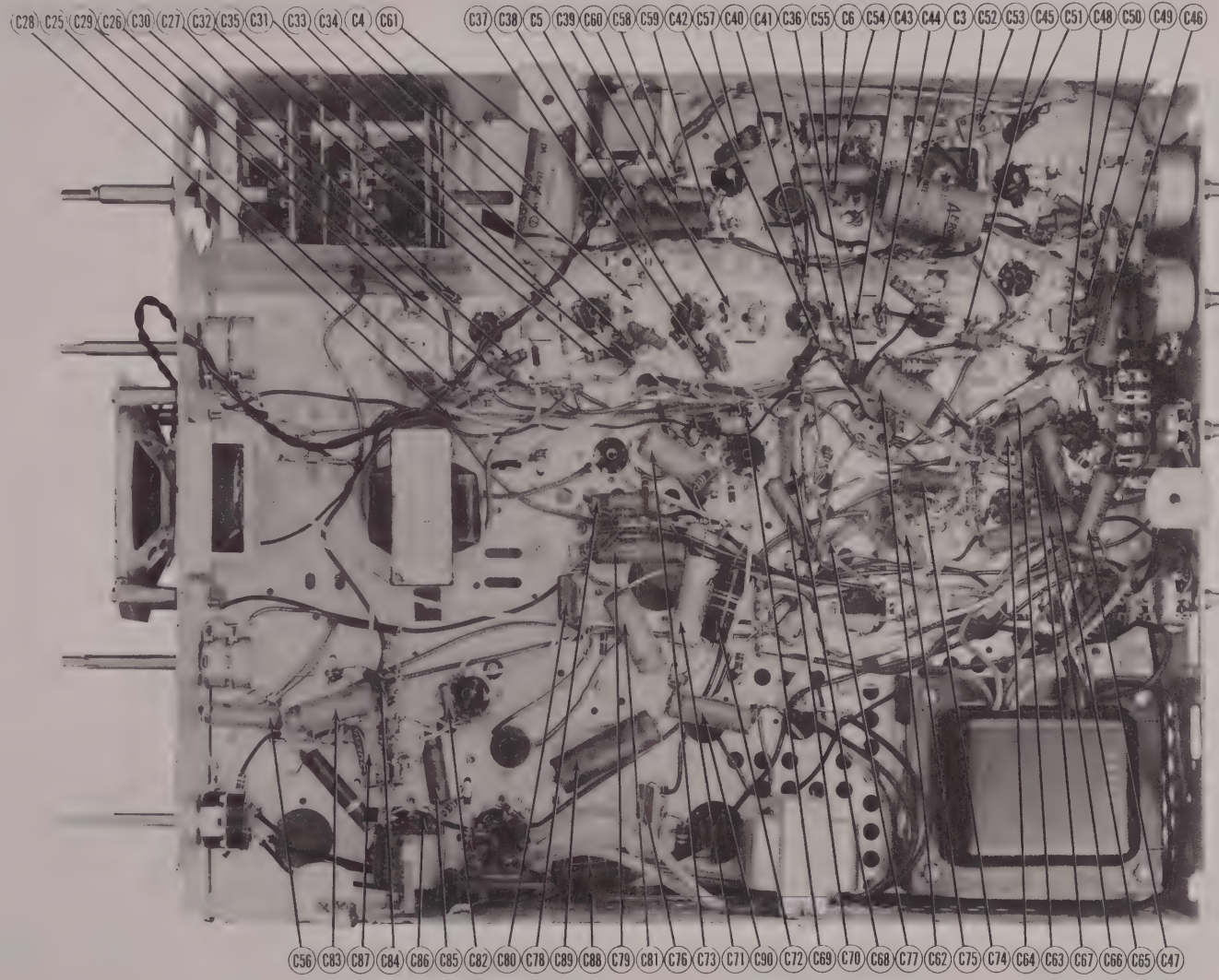
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



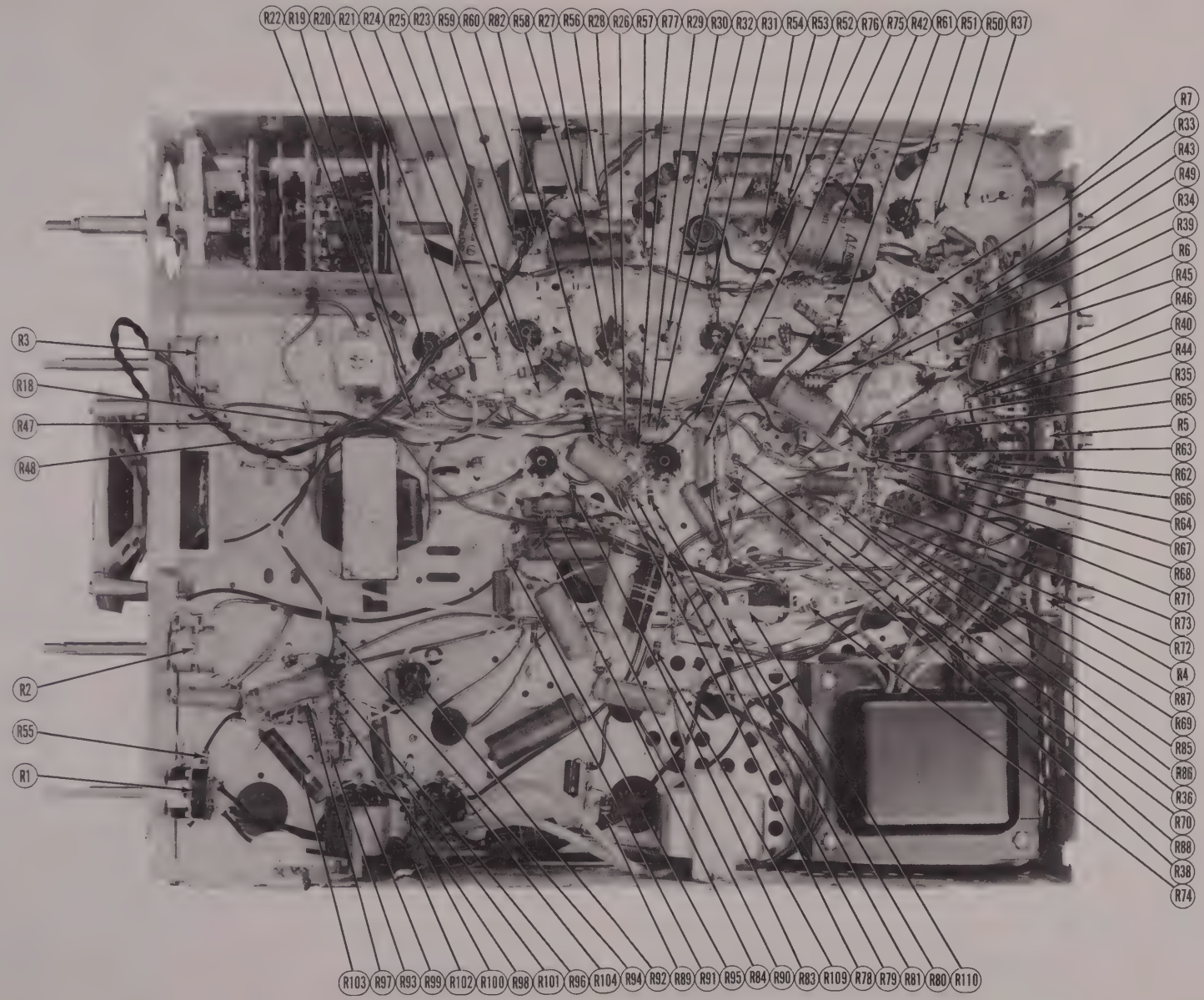
RF TUNER-FRONT VIEW



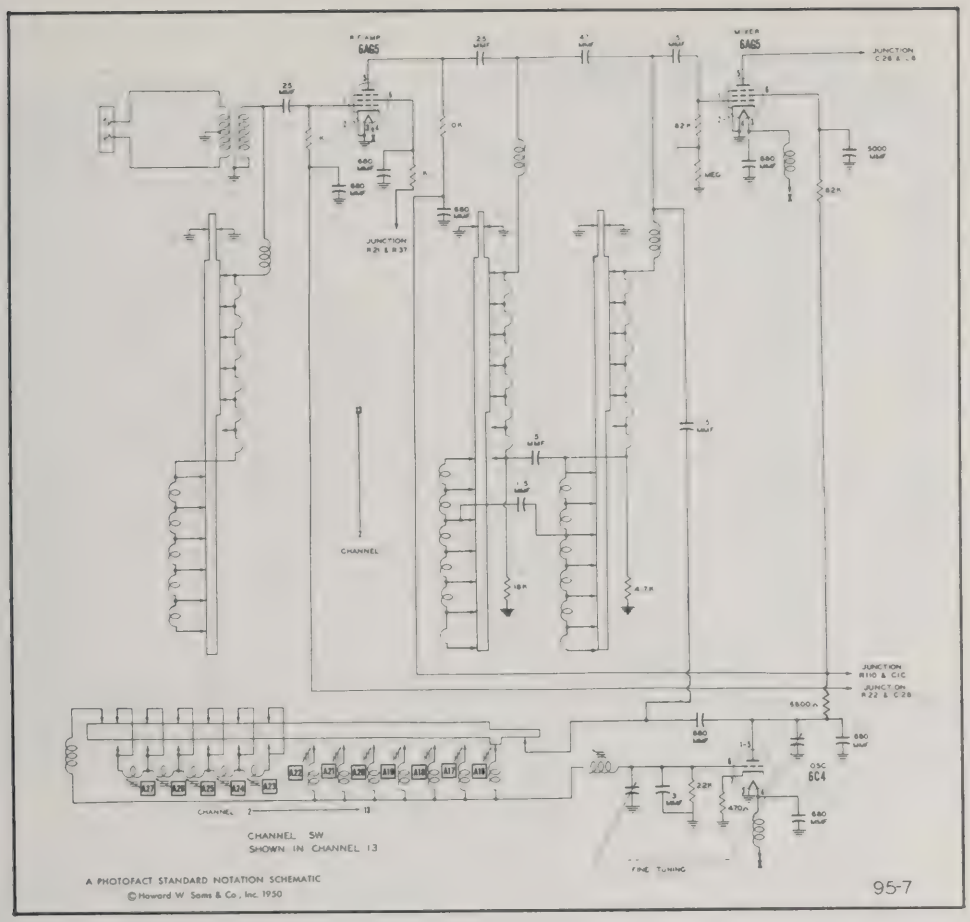
RF TUNER-RIGHT SIDE



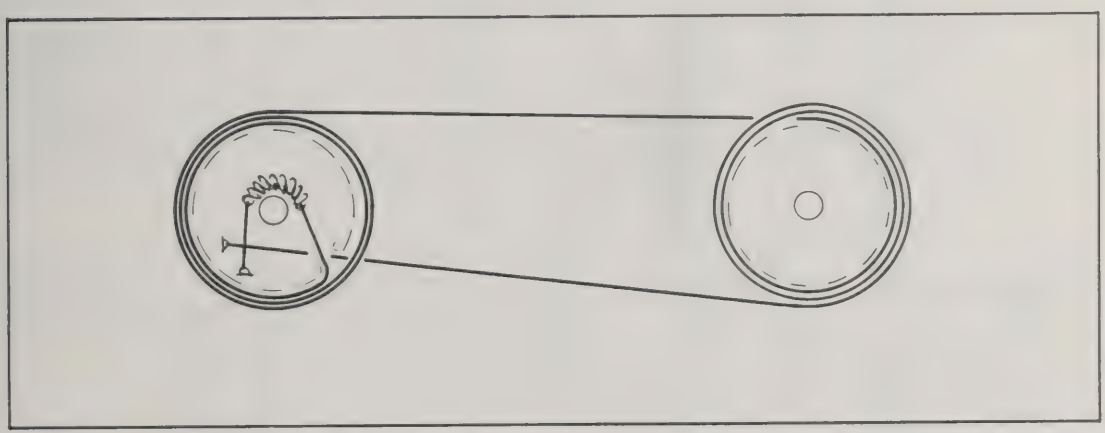
CHASSIS BOTTOM VIEW–CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



ALTERNATE TUNER V-5406



FINE TUNING DIAL CORD STRINGING

DISASSEMBLY INSTRUCTIONS

1. Remove eight push-on type control knobs.
2. Remove eight screws holding rear cover. Remove cover.
3. Disconnect built-in antenna at chassis terminal strip.
4. Remove two screws and 1 tack holding antenna tuning system in top of cabinet. Disconnect tuning shaft and remove assembly.
5. Tape antenna tuning shaft to top of cabinet in order to remove chassis.
6. Remove three 7/16" hex head bolts holding chassis. Remove chassis.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: WESTINGHOUSE PART No.	STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp		6AG5	7BD	
V2	Mixer		6AG5	7BD	
V3	Oscillator		6C4	6BG	
V4	1st Video IF		6BH6	7CM	
V5	2nd Video IF		6BH6	7CM	
V6	3rd Video IF		6BH6	7CM	
V7	4th Video IF		6BJ6	7CM	
V8	Video Det. -Noise Clipper		6AL5	6BT	
V9	AGC Keying		6BH6	7CM	
V10	Video Amp.		6AH6	7BK	
V11	1st Sound IF		6BH6	7CH	
V12	2nd Sound IF		6BH6	7CH	
V13	Ratio Det.		6AL5	6BT	
V14	AF Amp		6AV6	7BT	
V15	Audio Output		6K6GT	7S	
V16	1st Sync. Amp. - Sync. Sep.		12AT7	9A	
V17	2nd Sync. Amp. - Phase Inv.		12AU7	9A	
V18	Vert. Mult.		12AU7	9A	
V19	Vert. Output		6AQ5	7BZ	
V20	Hor. AFC		6AL5	6BT	
V21	Hor. Mult.		12AU7	9A	
V22	Hor. Output		6BQ6GT	6AM	
V23	Hor. Damper		6W4GT	4CG	
V24	HV Oscillator		6V6GT	7AC	
V25	HV Rectifier		1B3GT	3C	
V26	LV Rectifier		5U4G	5T	
V27	Picture Tube		10BP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	VOLT	WESTINGHOUSE PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	350	V-6509	AF888H30B			D14913	▲ Filter
B	40	350						■ Filter
C	40	350						▲ Filter
D	150	50						Output Cathode Bypass
C2A	80	350	V-5891	AF16222H			TVL-47	▲ Filter
B	10	350					TVA-25	■ Decoupling
C	10	350						▲ Vert. MV Plate Dec.
D	10	350						Vert. Output Plate Dec.
C3	10	450	V-5985	PRS450/10			TVA-21	Video Output Screen Bypass
C4	30	450	V-6570	PRS450/30			TVA-33	Output Decoupling
C5	20	25	V-3236	PRS25/25			TVA-6	Output Cathode Bypass
C6	2	50	V-4880	PRS150/4			TVA-12	Stabilizing Cap.
C7	25			GP25K	D6-250	GP1K-25		RF Coupling
C8	500			GP500M	D6-501	GP2K-500		AGC Filter
C9	500			GP500M	D6-501	GP2K-500		RF Bypass
C10	1500			GP1500M	D6-152	GP2L-0015	29C3	Decoupling
C11	50			GP50K	D6-500	GP1K-50		RF Coupling
C12	1			SIBNPO	D2-1			RF Coupling
C13	2			SIZCN750	D2-2.2			RF Coupling
C14	5			SISCW750	D2-4.7	N750K-5		RF Coupling †
C15	22			GP22K	DN-22	GP1K-22		RF Coupling
C16	500			GP500M	D6 501	GP2K 500		RF Filament Bypass
C17	250			GP250M	D6-251	GP2K-250		Mixer Filament Bypass
C18	1500			GP1500M	D6-152	GP2L-0015	29C3	Mixer Screen Bypass
C19	1			SIBN750	D2-1			Osc. Coupling
C20	5			CN5CN750		N750K-5		Fixed Padder
C21	25			CN25KN750	DN-24	N750K-25		Fixed Padder
C22	500			GP500M	D6-501	GP2K-500		Osc. Plate Bypass
C23	250			GP250M	D6 251	GP2K-250		Osc. Fil. Bypass
C24	500			GP500 M	D6-501	GP2K-500		Osc. Cathode Bypass †
C25	1500		R5CC26ZY152M	GP1500M	D6-152	GP2L-0015	1FM-215	Mixer Plate Dec.
C26	150		R5CC21ZY151M	GP150M	D6-151	GP2K-150	1FM-315	IF Coupling
C27	1		V-5658-1		D2-1			Fixed Trimmer
C28	1500		R5CC26ZY152M	GP1500M	D6-152	GP2L-0015	1FM-215	AGC Filter
C29	1500		R5CC26ZY152M	GP1500M	D6-152	GP2L-0015	1FM-215	RF Bypass
C30	1500		R5CC26ZY152M	GP1500M	D6-152	GP2L-0015	1FM-215	1st V. IF Decoupling
C31	150		R5CC21ZY151M	GP150M	D6-151	GP2K-150	1FM-315	IF Coupling
C32	1500		R5CC26ZY152M	GP1500M	D6-152	GP2L-0015	1FM-215	4th V. IF Cathode Bypass
C33	1500		R5CC26ZY152M	GP1500M	D6-152	GP2L-0015	1FM-215	4th V. IF Filament Bypass
C34	1500		R5CC26ZY152M	GP1500M	D6-152	GP2L-0015	1FM-215	4th V. IF Decoupling
C35	5000		V-5596	BPD-5	D6-502	811-005	29C1	AGC Filter
C36	.01	400	RCP10W4103M	P488-01	D6-103	821-01	TM-11	AGC Filter
C37	1500		R5CC26ZY152M	GP1500M	D6-152	GP2L-001	1FM-215	3rd V. IF Decoupling
C38	5000		V-5596	BPD-5	D6-502	811-005	29C1	3rd V. IF Cath. Bypass
C39	150		R5CC21ZY151M	GP150M	D6-151	GP2K-150	1FM-315	IF Coupling
C40	1500		R5CC26ZY152M	GP1500M	D6-152	GP2L-0015	1FM-215	4th V. IF Cathode Bypass
C41	1500		R5CC26ZY152M	GP1500M	D6-152	GP2L-0015	1FM-215	4th V. IF Filament Bypass
C42	1500		R5CC26ZY152M	GP1500M	D6-152	GP2L-0015	1FM-215	4th V. IF Decoupling
C43	100		R5CC21ZY101M	GP100M	D6-101	GP1K-100	1FM-31	IF Coupling
C44	4.7		V-5658-8	CI4.7CNPO	D2-4.7	NPOK-4.7	MS-55	Fixed Trimmer
C45	4.7		V-5658-8	CI4.7CNPO	D2-4.7	NPOK-4.7	MS-55	V. Diode Filter
C46	.1	400	RCP10W4104M	P488-1			TM-1	Video Coupling
C47	.1	400	RCP10W4104M	P488-1			TM-1	Pic. Tube Grid Bypass
C48	2.2		V-5658-2	CI2.2CNPO	D2-2.2			S. IF Coupling
C49	.01	400	V-6066-4103M	P488-01	D6-103	821-01	TM-11	1st S. IF Cathode Bypass
C50	47	500	RCM20B470M	1468-00005	D6-470	GP1K-47	1FM-45	S. IF Coupling
C51	.01	400	RCP10W4103M	P488-01	D6-103	821-01	TM-11	2nd S. IF Decoupling
C52	4.7		V-5658-6	CI4.7CNPO	D2-4.7	NPOK-4.7	MS-55	Fixed Trimmer
C53	680	500	RCM20B681M	GP680M	D6-681	GP2K-680	1FM-37	Diode Load Cap.
C54	.002	600	RCP10W6202M	P688-002	D6-202	GP2M-002	TM-22	De-emphasis
C55	.01	400	RCP10W4103M	P488-01	D6-103	821-01	TM-11	Audio Coupling
C56	.005	400	RCP10W4502M	P688-005	D6-502	811-005	TM-25	Tone Compensation
C57	.01	400	RCP10W4103M	P488-01	D6-103	821-01	TM-11	Audio Coupling
C58	100	500	RCM20B101M	1468-0001	D6-101	GP1K-100	1FM-31	AF Amp. Grid Bypass
C59	270	500	RCM20B271M	1468-00025	D6-271	GP2K-270	1FM-325	AF Amp. Plate Bypass

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	VOLT	WESTINGHOUSE PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C60	.01	400	RCP10W4103M	P488-01	D6-103	821-01	TM-11	Audio Coupling
C61	.002	600	RCP10W6202M	P688-002	D6-202	GP2M-002	TM-22	Output Plate Bypass
C62	.25	400	V-6066-4254M	P488-25			TC-2	Sync. Coupling
C63	390	500	RCM20B391M	1468-0004	D6-391	GP2K-390	1FM-34	Sync. Coupling
C64	.01	400	RCP10W4103M	P488-01	D6-103	821-01	TM-11	Sync. Coupling
C65	.05	400	RCP10W4503M	P488-05			TM-15	Sync. Coupling
C66	.05	400	RCP10W4503M	P488-05			TM-15	Sync. Coupling
C67	100	500	RCM20B101M	1468-0001	D6-101	GP1K-100	1FM-31	2nd Sync. Amp. Plate Bypass
C68A	2000		*	P688-002	D6-202	GP2M-002	TM-22	Integrator Net.
B	5000			P688-005	D6-502	811-005	TM-25	Integrator Net.
C	5000			P688-005	D6-502	811-005	TM-25	Integrator Net.
C69	.01	400	V-6023-4103M	P488-01	D6-103	821-01	TM-11	Vert. MV Feedback
C70	.01	400	RCP10W4503M	P488-01	D6-103	821-01	TM-11	Vert. MV Cath. Bypass
C71	.1	400	RCP10W4104M	P488-1			TM-1	Vert. Hold Cont. Bypass
C72	.1	400	V-6023-4104K	P488-1			TM-1	Vert. Discharge
C73	.1	400	RCP10W4104M	P488-1			TM-1	Vert. Sweep Coupling
C74	.001	600	RCP10W6102M	P688-001	D6-102	GP2L-001	TM-21	Hor. Sync. Coupling
C75	.001	600	RCP10W6102M	P688-001	D6-102	GP2L-001	TM-21	Hor. Sync. Coupling
C76	330	500	RCM20C331J	1469-00035	DN-330			Hor. Feedback
C77	.0033	600	RCP10W6302M	P688-0033	D6-332	GP2M-0033	TM-23	Voltage Divider †
C78	.005	400	RCP10W4502M	P688 005	D6-502	811-005	TM-25	AFC Filter
C79	.05	400	RCP10W4503M	P488-05			TM-15	AFC Filter
C80	3900	500	RCM30C392K	1464-004			MS-24	Fixed Trimmer
C81	.1	400	RCP10W4104M	P488-1			TM-1	Hor. MV Decoupling
C82	330	500	RCM20C331J	1469-00035	DN-330			Hor. MV Feedback
C83	.1	400	RCP10W4104M	P488-1			TM-1	Hor. MV Decoupling
C84	330	500	RCM20C331J	1469-00035	DN-330			Hor. Discharge
C85	.01	400	RCP10W4103M	P488-01	D6-103	821-01	TM-11	Hor. Sweep Coupling
C86	150		R5CC21ZY151M	GP150M	D6-151	GP2K-150	1FM-315	Hor. Output Grid Bypass
C87	.1	400	RCP10W4104M	P488-1			TM-1	Hor. Output Screen Bypass
C88	.1	400	V-6023-4104M	P488-1			TM-1	Hor. Sweep Coupling
C89	.25	400	RCP10W4254M	P488-25			TC-2	Damper Filter
C90	.1	400	RCP10W4104M	P488 1			TM-1	HV Osc. Decoupling
C91	.05	400	V-6023-4503M	P488-05			TM-15	HV Osc. Screen Bypass
C92	.05	400	V-6023-4503M	P488-05			TM-15	HV Osc. Plate Decoupling
C93	.05	400	V-6023-4503M	P488-05			TM-15	HV Osc. Grid Filter
C94	500	10000	V-5895		TV2-501			HV Filter

* Items C68A, C68B, C68C, R75A, R75B and R75C are combined into one unit obtainable under MFGR'S Part No. V-9213-1
† Some models use .001MFD in this application.
‡ Not used in all models.

CONTROLS

ITEM No.	RATING: RESISTANCE	WATTS	Westinghouse PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1 Meg.	½	V-6465-1	Q13-I37X	T-109	BT-73-S	Volume control tapped@ 300KΩ
B	Switch		Not Req.	76-1	SW-A	Not Req.	Attach to R1A per instructions
R2A	500KΩ	½		Bil-133 *			Vert. hold control-panel
B	100KΩ	½	V-9233	Bil-128 *	V-9233	SBB-514	Horiz. hold control-rear
C	Shaft End			E-202 *			Attach per instructions in "Concentrikit"
R3A	50KΩ	½					Brightness control-panel
B	1500Ω	½	V-9235-2		V-9235-2	SBB-513	Contrast control-rear
R4A	5000Ω	½	V-6463	Q11-I14	AM-19-S	AM-10	Vert. linearity control
B	Shaft		Not Req.	RQ	KSS-3 #	AK-1	Attach to R4A per instructions
R5A	1 Meg.	½	V-6462	Q11-I37	AM-61-S	AM-69	Height control
B	Shaft		Not Req.	RQ	KSS-3 #	AK-1	Attach to R5A per instructions
R6	5000Ω	3	V-6500-1		58-5000 #	V-135 #	Width control-Wire Wound
R7	600Ω	3	V-9232			V-127 #	Focus control-Wire Wound

* Additional parts to be used with "Concentrikit."
# File slot in shaft to duplicate original.

RESISTORS

ITEM No.	RATING: RESISTANCE	WATTS	WESTINGHOUSE PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ARE ± 10% UNLESS OTHERWISE STATED.
R8	1000Ω	½		BTS-1000	RF Grid-See Note 1
R9	47KΩ	½			RF Screen
R10	820Ω	½		BTS-820	Mixer Coil Shunt
R11	470Ω	½			Mixer Coil Shunt
R12	47KΩ	½			Mixer Grid
R13	1 Meg.	½			Mixer Grid
R14	82KΩ	½			Mixer Screen
R15	22KΩ	½			Osc. Grid
R16	390Ω	½			Osc. Cathode-See Note 2
R17	1800Ω	1		BTA-1800	Osc. Plate
R18	1000Ω 20%	1	RC20AE102M	BTS-1000	Mixer Plate Decoupling
R19	12KΩ	½	RC20AE123K	BTS-12K	1st Video IF Grid
R20	100Ω	½	RC20AE101K		1st Video IF Cathode
R21	1000Ω 20%	½	RC20AE102M	BTS-1000	1st Video IF Decoupling
R22	10KΩ 20%	½	RC20AE103M	BTS-10K	AGC Network
R23	10KΩ 20%	½	RC20AE103M	BTS-10K	AGC Network
R24	10KΩ	½	RC20AE103K	BTS-10K	2nd Video IF Grid
R25	100Ω	½	RC20AE101K		2nd Video IF Cathode
R26	1000Ω 20%	½	RC20AE102M	BTS-1000	2nd Video IF Decoupling
R27	5600Ω	½	RC20AE562K		3rd Video IF Coil Shunt
R28	68Ω	½	RC20AE680K		3rd Video IF Cathode
R29	1000Ω 20%	½	RC20AE102M	BTS-1000	3rd Video IF Decoupling
R30	4700Ω	½	RC20AE472K	BTS-4700	4th Video IF Coil Shunt
R31	68Ω	½	RC20AE680K		4th Video IF Cathode
R32	3900Ω	1	RC30AE392K	BTA-3900	4th Video IF Decoupling
R33	2.2 Meg.	½	RC20AE225K	BTS-2.2 Meg.	AGC Network
R34	330KΩ	1	RC30AE334K	BTA 220K	AGC Keying Plate Load
R35	4700Ω	½	RC20AE472K	BTS-4700	AGC Keying Grid
R36	47KΩ	½	RC20AE473K	BTS-47K	AGC Keying Cathode
R37	2700Ω	5	V-6984-8		Voltage Dropping-Wire Wound
R38	10KΩ	½	RC20AE103K	BTS-10K	Voltage Divider
R39	4700Ω	½	RC20AE472K	BTS-4700	Video Det. Diode Load
R40	10KΩ	½	RC20AE103K	BTS-10K	Isolation
R41	2200Ω	½	RC20AE222K	BTS-2200	Contrast Control Shunt-See Note 3

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	WATTS	WESTINGHOUSE PART No.	IRC PART No.	IDENTIFICATION CODES
R42	68KΩ	½	RC20AE683K	BTS-68K	Video Output Screen
R43	33KΩ	½	RC20AE333K	BTS-33K	Peaking Coil Shunt
R44	3600Ω 5%	1	RC30AE362J		Video Output Plate
R45	100KΩ	½	RC20AE104K	BTS-100K	Voltage Divider
R46	150KΩ	½	RC20AE154K	BTS-150K	Picture Tube Cathode
R47	22KΩ	½	RC20AE223K	BTS-22K	Voltage Divider
R48	47KΩ	½	RC20AE473K	BTS-47K	Voltage Divider
R49	120Ω	½	RC20AE121K		1st Sound IF Cathode
R50	47KΩ	½	RC20AE473K	BTS-47K	2nd Sound IF Grid
R51	68KΩ	1	RC30AE683K		2nd Sound IF Decoupling
R52	33KΩ	½	RC20AE333K	BTS-33K	De-emphasis
R53	10KΩ 5%	½	RC20AE103J	BTS-10K-5%	Ratio Det. Diode Load
R54	10KΩ 5%	½	RC20AE103J	BTS-10K-5%	Ratio Det. Diode Load
R55	22KΩ	½	RC20AE223K	BTS-22K	Tone Compensation
R56	10 Meg. 20%	½	RC20AE106M	BTS-10 Meg.	AF Amp. Grid
R57	270KΩ	½	RC20AE274K	BTS-270K	AF Amp. Plate
R58	470KΩ	½	RC20AE474K	BTS-470K	Output Grid
R59	330Ω	½	RC20AE331K	BW-½-330	Output Cathode
R60	680Ω	½	RC20AE681K	BTS-680	Output Decoupling
R61	2.2 Meg.	½	RC20AE225K	BTS-2.2 Meg.	Noise Clipper Load
R62	1 Meg.	½	RC20AE105K	BTS-1 Meg.	Voltage Divider
R63	22KΩ	½	RC20AE223K	BTS-22K	1st Sync. Amp. Plate
R64	470KΩ	½	RC20AE474K	BTS-470K	Charge Limiting
R65	1 Meg.	½	RC20AE105K	BTS-1 Meg.	Sync. Sep. Grid
R66	150KΩ	½	RC20AE154K	BTS-150K	Sync. Sep. Plate
R67	33KΩ	½	RC20AE333K	BTS-33K	Voltage Divider
R68	1 Meg.	½	RC20AE105K	BTS-1 Meg.	2nd Sync. Amp. Grid
R69	1000Ω	½	RC20AE102K	BTS-1000	2nd Sync. Amp. Cathode
R70	330Ω	½	RC20AE331K	BW-½-330	2nd Sync. Amp. Cathode
R71	15KΩ	½	RC20AE153K	BTS-15K	2nd Sync. Amp. Plate
R72	2.2 Meg.	½	RC20AE225K	BTS-2.2 Meg.	Sync. Phase Inv. Grid
R73	2700Ω	½	RC20AE272K	BTS-2700	Sync. Phase Inv. Cathode
R74	2700Ω	½	RC20AE272K	BTS-2700	Sync. Phase Inv. Plate
R75A	22KΩ	½	†	BTS-22K	Integrator Network
B	820KΩ	½	†	BTS-8200	Integrator Network
C	8200Ω	½	†	BTS-8200	Integrator Network
R76	100KΩ 5%	½	RC20AE104J	BTS-100K-5%	Vert. MV Plate
R77	1200Ω	½	RC20AE122K	BTS-1200	Vert. MV Cathode
R78	470KΩ	½	RC20AE474K	BTS-470K	Vert. MV Grid
R79	390KΩ	½	RC20AE394K	BTS-390K	Vert. MV Plate
R80	47KΩ	½	RC20AE473K	BTS-47K	Vert. MV Decoupling
R81	3900Ω	½	RC20AE392K	BTS-3900	Vert. Peaking
R82	2.2 Meg.	½	RC20AE225K	BTS-2.2 Meg.	Vert. Output Grid
R83	470Ω	½	RC20AE471K	BTS-470	Vert. Output Cathode
R84	1000Ω 20%	½	RC20AE102M	BTS-1000	Vert. Output Decoupling
R85	100KΩ 5%	½	RC20AE104J	BTS-100K-5%	Horiz. AFC Diode Load
R86	100KΩ 5%	½	RC20AE104J	BTS-100K-5%	Horiz. AFC Diode Load
R87	4.7 Meg. 20%	½	RC20AE475M	BTS-4.7 Meg.	Horiz. AFC Diode Load
R88	68KΩ	½	RC20AE683K	BTS 68K	Horiz. AFC Filter Network
R89	220KΩ	1	RC30AE224K	BTA-220K	Feedback Network
R90	470KΩ	½	RC20AE474K	BTS-470K	Horiz. AFC Filter Network
R91	5600Ω	½	RC20AE562K	BTS-5600	Horiz. A-V Plate
R92	100Ω	½	RC20AE101K		Horiz. MV Cathode
R93	1800Ω	½	RC20AE182K	BTS-1800	Horiz. MV Cathode
R94	220KΩ 5%	½	RC20AE224J	BTS-220K-5%	Horiz. MV Grid
R95	33KΩ	½	RC20AE333K	BTS-33K	Horiz. MV Plate Decoupling
R96	220KΩ	½	RC20AE224K	BTS 220K	Horiz. MV Plate
R97	10KΩ	½	RC20AE103K	BTS-10K	Horiz. MV Plate Decoupling
R98	15KΩ	½	RC20AE153K	BTS-15K	Horiz. Peaking
R99	120Ω	½	RC20AE121K		Parasitic Supp.
R100	330Ω 20%	½	RC20AE330M		Parasitic Supp.
R101	470KΩ	½	RC20AE474K	BTS-470K	Horiz. Output Grid-See Note 4
R102	150Ω	2	V-9002-4151K	BW-2-150	Horiz. Output Cathode-Wire Wound
R103	8200Ω	2	V-9002-4822K	BT-2-8200	Horiz. Output Screen-Wire Wound
R104	150Ω	½	RC20AE151K	BW-½-150	Damper Filter
R105	2200Ω	½	RC20AE222K	BTS-2200	HV Osc. Grid
R106	10KΩ	½	RC30AE103K	BTA-10K	HV Osc. Screen
R107	68Ω	½	RC20AE680K	BW-½-68	HV Osc. Plate Decoupling
R108	100KΩ	½	RC20AE104K		HV Filter
R109	68Ω	½	RC20AE680K	BW-½-68	Decoupling
R110	110Ω	3	V-4758		Focus Coil Shunt-Wire Wound

† Items C68A, C68B, C68C, R75A, R75B and R75C are combined into one unit obtainable under MFGR'S Part No. V-9213-1.
Note 1. Some models use 820Ω resistor in this application.
Note 2. Some models use 330Ω resistor in this application.
Note 3. Not used in all models.
Note 4. Some models use 100KΩ resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	SEC. 1	SEC. 2	SEC. 3	WESTINGHOUSE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC @ 7.5A	560VCT 5VAC .235ADC	@ 3A	12.6VCT @ 3.7A	V-9395	P-8156 ②		

② Drill new mounting holes.

TRANSFORMER (FILAMENT)

ITEM No.	RATING: PRI.	SEC. 1	SEC. 2	SEC. 3	WESTINGHOUSE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T2	117VAC @ .1A	6.3VAC @ 1.2A			V-6481-3	P-8134 ①	P-2945	F-633 ①

① Drill one new mounting hole.

WESTINGHOUSE
MODEL H-609TTIO (Ch. V-2150-94C)

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA WESTINGHOUSE PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA MERIT PART No.	REPLACEMENT DATA CHICAGO PART No.	NOTES
T3	400Ω		V-9230-1				Hor. Output Choke
T4	650Ω	12.5Ω	V-6981-2	A-8112 ①	A-3036 ①	TSO-5	Vert. Output Trans.
T5A	38Ω		V-6486-3	DY-1	MD-3		Hor. Deflection Coil
B	58Ω						Vert. Deflection Coil
T6	250Ω		V-6639-2	FC-10	MF-1		Focus Coil
T7	1.5Ω	550Ω	V-6457				HV Trans.
		SEC. 2					
		1.6Ω					
		SEC. 3					
		0Ω					

① Drill one new mounting hole.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA WESTING-HOUSE PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA MERIT PART No.	REPLACEMENT DATA CHICAGO PART No.	INSTALLATION NOTES
T8	7KΩ	3.5Ω	490Ω	.8Ω	V-2938	A-3878	A-2931	RO-13	

SPEAKER

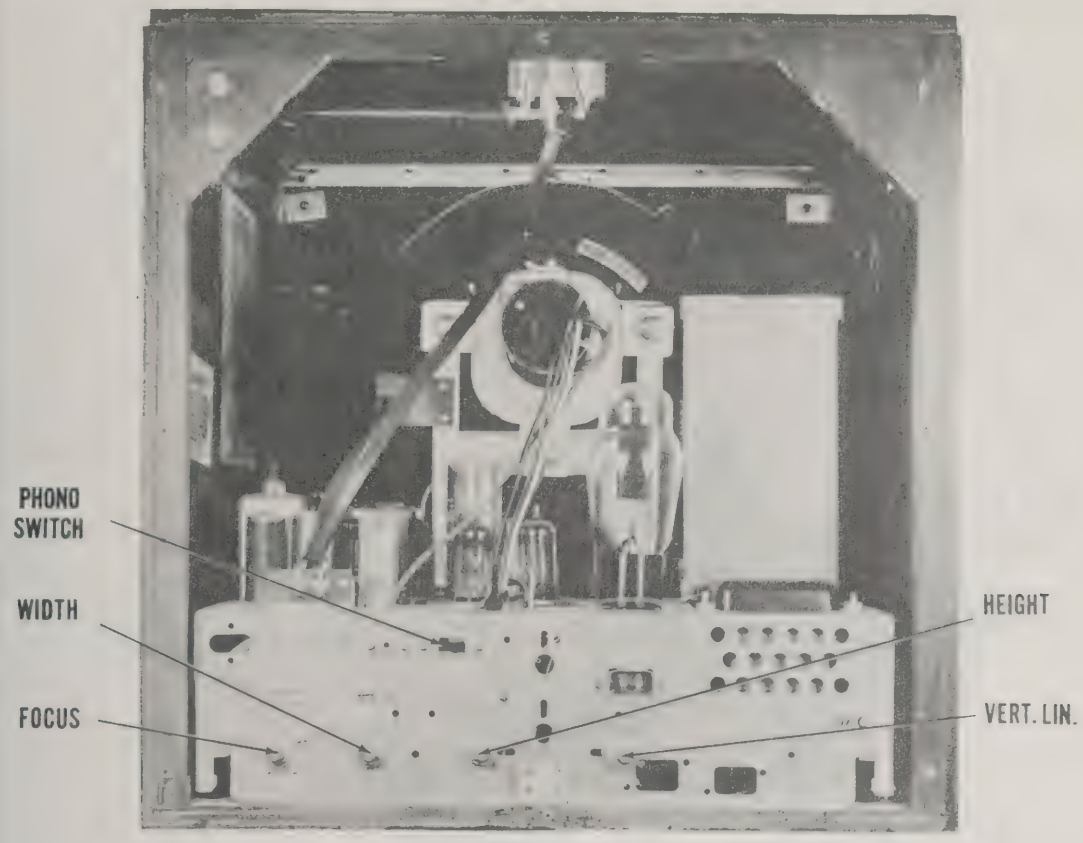
ITEM No.	RATINGS FIELD RES.	RATINGS V. C. IMP.	REPLACEMENT DATA WESTINGHOUSE PART No.	REPLACEMENT DATA JENSEN PART No.	REPLACEMENT DATA QUAM PART No.	NOTES
SP1	60Ω	3.5Ω	V-9236		4E60S	
	CONE DIA.	V. C. DIA.				
SP2	4"	9/16"				

COILS (RF-IF)

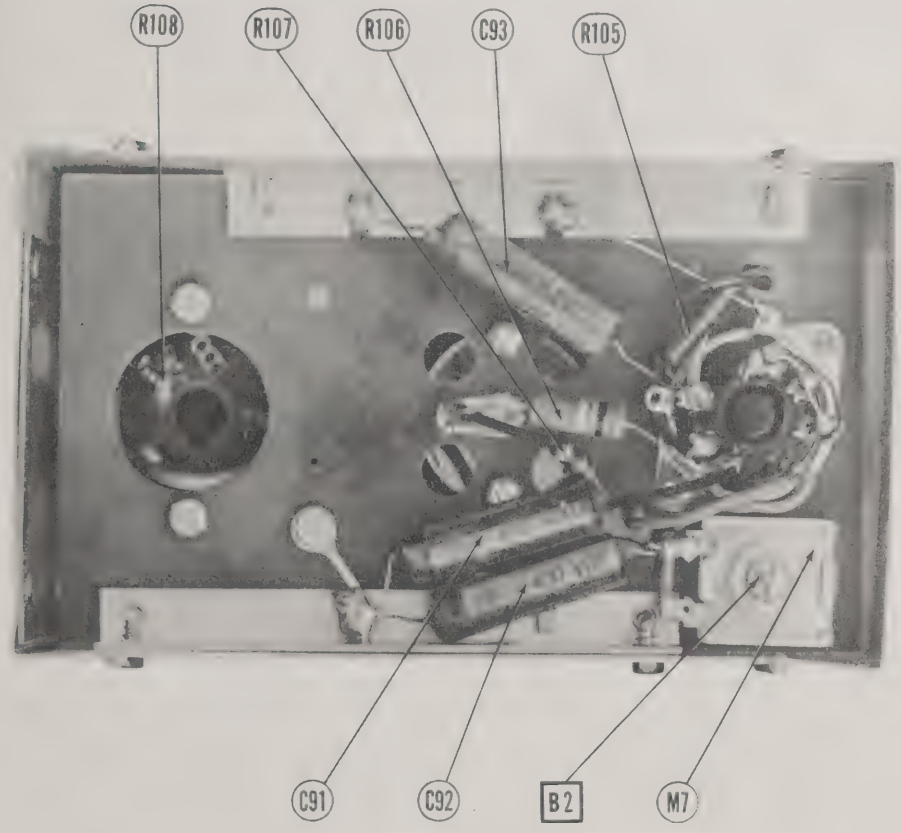
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA WESTINGHOUSE PART No.	REPLACEMENT DATA MEISSNER PART No.	NOTES
L1	Ant. Trans.	0Ω	0Ω			Part of tuner Part #8215
L2	RF Choke	.1Ω				Part of tuner Part #8215
L3	Fil. Choke	.1Ω				Part of tuner Part #8215
L4	Fil. Choke	.1Ω				Part of tuner Part #8215
L5	RF Choke	.1Ω				Part of tuner Part #8215
L6	1st Video IF	.1Ω		V-9231		
L7	1st Video IF Coupling	0Ω		V-9501-1		1.1 microhenries
L8	2nd Video IF	.1Ω		V-6459		
L9	RF Choke	2.9Ω		V-5902-7		40 microhenries
L10	3rd Video IF	.1Ω		V-6459		
L11	RF Choke	2.9Ω		V-5902-7		40 microhenries
L12	4th Video IF	.1Ω		V-6459		
L13	4th Video IF Cathode Trap	0Ω	0Ω	V-5899		
L14	RF Choke	2.9Ω		V-5902-7		40 microhenries
L15	5th Video IF	.1Ω		V-6459		
L16	Peaking	4.8Ω		V-5902-4	19-1920	100 microhenries
L17	Peaking	5.9Ω		V-5902-1	19-1921	140 microhenries
L18	Peaking	8Ω		V-5902-5	19-1922	250 microhenries
L19	Sound IF	1.9Ω		V-6517		
L20	RF Choke	4.8Ω		V-5902-4		100 microhenries
L21	Ratio Det. Trans.	6.8Ω	.8Ω	V-6485		
L22	Ringing Coil	100Ω		V-6764		
L23	Fil. Choke	.9Ω		V-9501-1		
L24	Fil. Choke	.9Ω		V-9501-1		
L25	Para. Supp.	0Ω				

MISCELLANEOUS

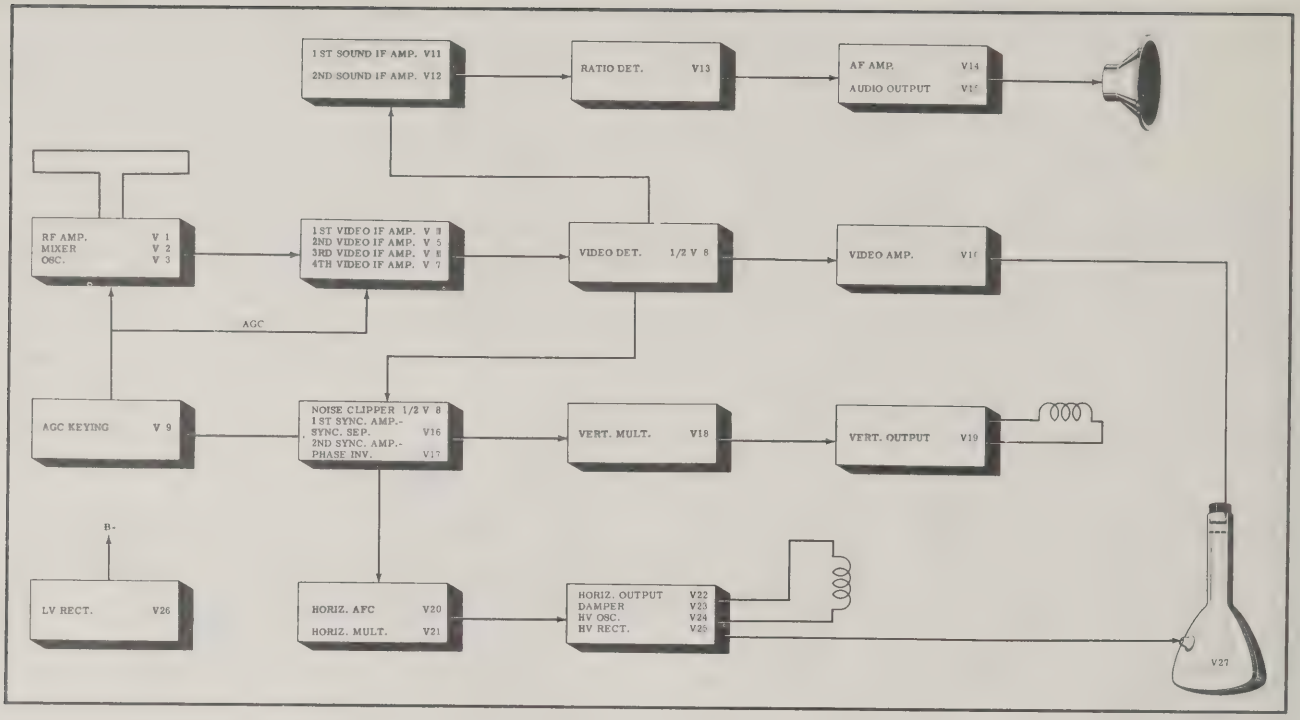
ITEM No.	PART NAME	WESTINGHOUSE PART No.	NOTES
M1A	RF Tuner	V-8215	
B	RF Tuner	V-6771-2	
M2	Switch	V-5406	Phono-TV
M3	Ion Trap	V-6573-3	
M4	Antenna Assembly	V-9376-1	
M5	Trimmer	V-3713-3	21.6MC Trap
M6	Trimmer	V-6376	4.5MC Trap
	Knob	V-6146-1	Contrast, Horiz. Hold
	Knob	V-9104-1	Brightness, Vert. Hold
	Knob	V-6146-5	Volume, On-Off (Front)
	Knob	V-9104-3	Volume, On-Off (Rear)
	Knob	V-9104-4	Fine Tuning
	Knob	V-7983	Channel Selector



CABINET-REAR VIEW



HIGH VOLTAGE SUPPLY-BOTTOM VIEW



BLOCK DIAGRAM

HORIZONTAL SWEEP CIRCUIT ADJUSTMENT

Turn the set on and tune in a TV station, preferably a test pattern.

Turn the horizontal hold control to the mid-position of its range.

Adjust the "ringing" coil core (B1) until the picture is properly synchronized horizontally.

Adjust the width control until the picture fills the mask horizontally.

HIGH VOLTAGE OSCILLATOR ADJUSTMENT

Connect 13 one megohm, 1 watt, resistors in series from the high voltage lead to chassis.

Connect the high voltage multiplier probe of a VTVM across the 13 meg. resistance.

Adjust the high voltage oscillator trimmer (B2) until the meter reads 9.3 KV.

PHOTOFACT* Folder

ZENITH MODELS
G2951, G2951R, G2952R, G2952-ROX (CH. 29G20), 27T965R (CH. 27F20)

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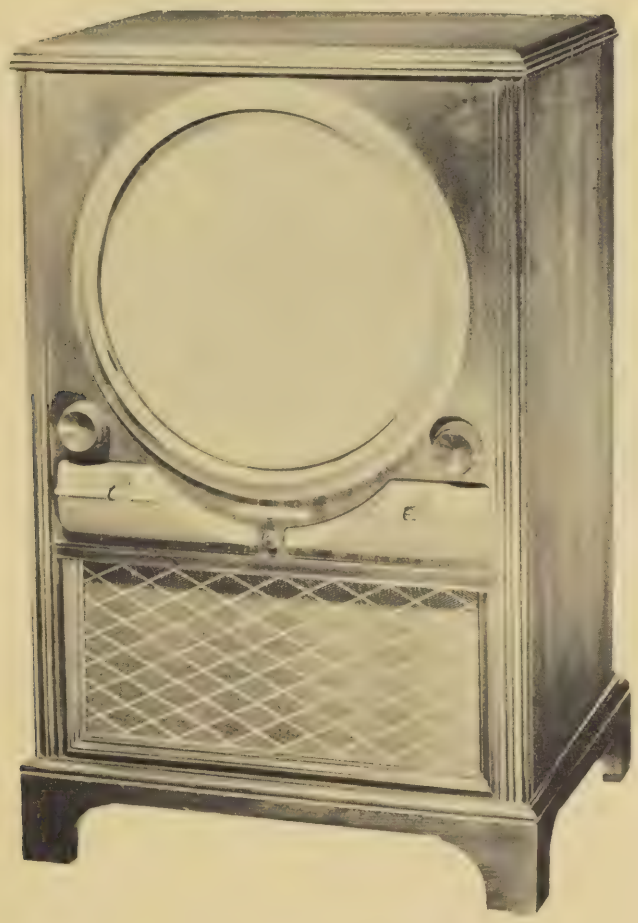

MODEL G2952-ROX

ZENITH MODELS
G2951, G2951R, G2952R, G2952-ROX
(CH. 29G20), 27T965R (CH. 27F20)

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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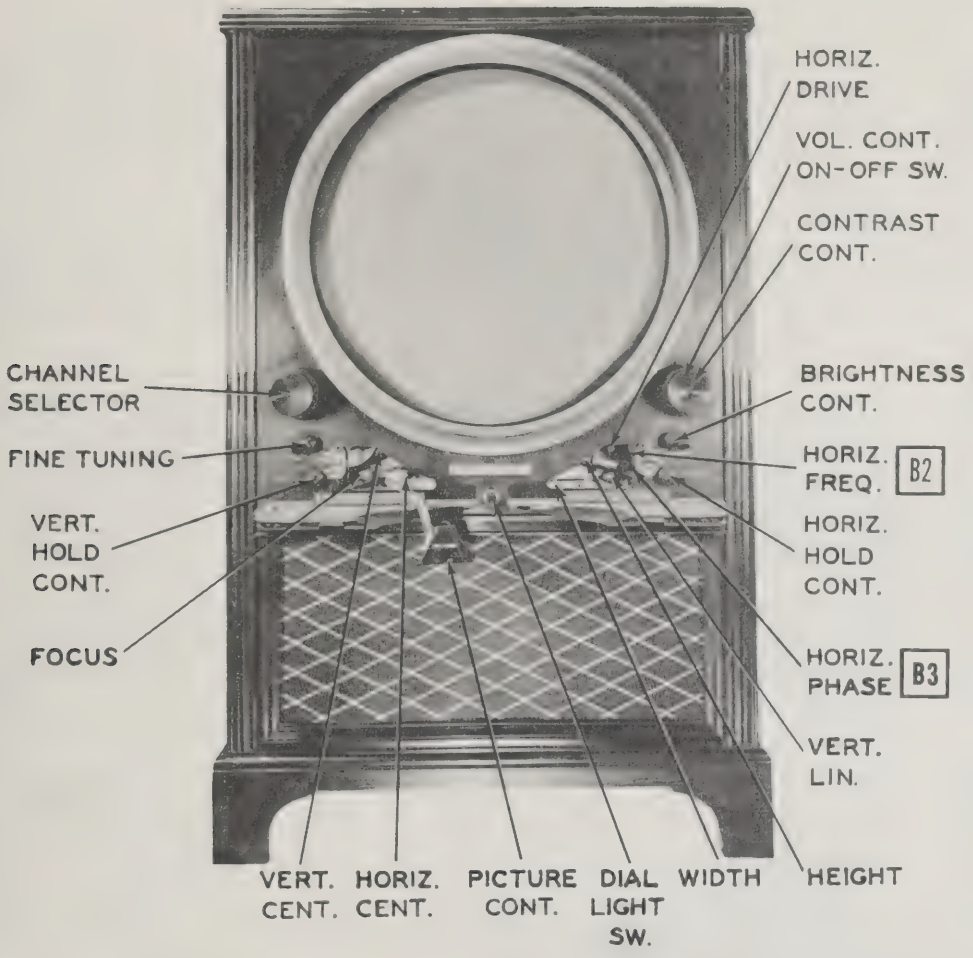

ZENITH MODEL G2952-ROX

TRADE NAME	Zenith Models G2951, G2951R, G2952R, G2952-ROX (Ch. 29G20), 27T965R (Ch. 27F20)
MANUFACTURER	Zenith Radio Corp., 6001 Dickens Ave., Chicago 39, Illinois
TYPE SET	Television Receiver
TUBES	Twenty Seven (Ch. 27F20) Twenty Nine (Ch. 29F20)
POWER SUPPLY	110-120 Volts AC-60 Cycles RATING 3.3 Amp. at 117 Volts AC
TUNING RANGE—Channels 2 thru 13	

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ZENITH MODELS G2951, R, G2952R, -ROX (Ch. 29G20) 27T965R (Ch. 27F20)

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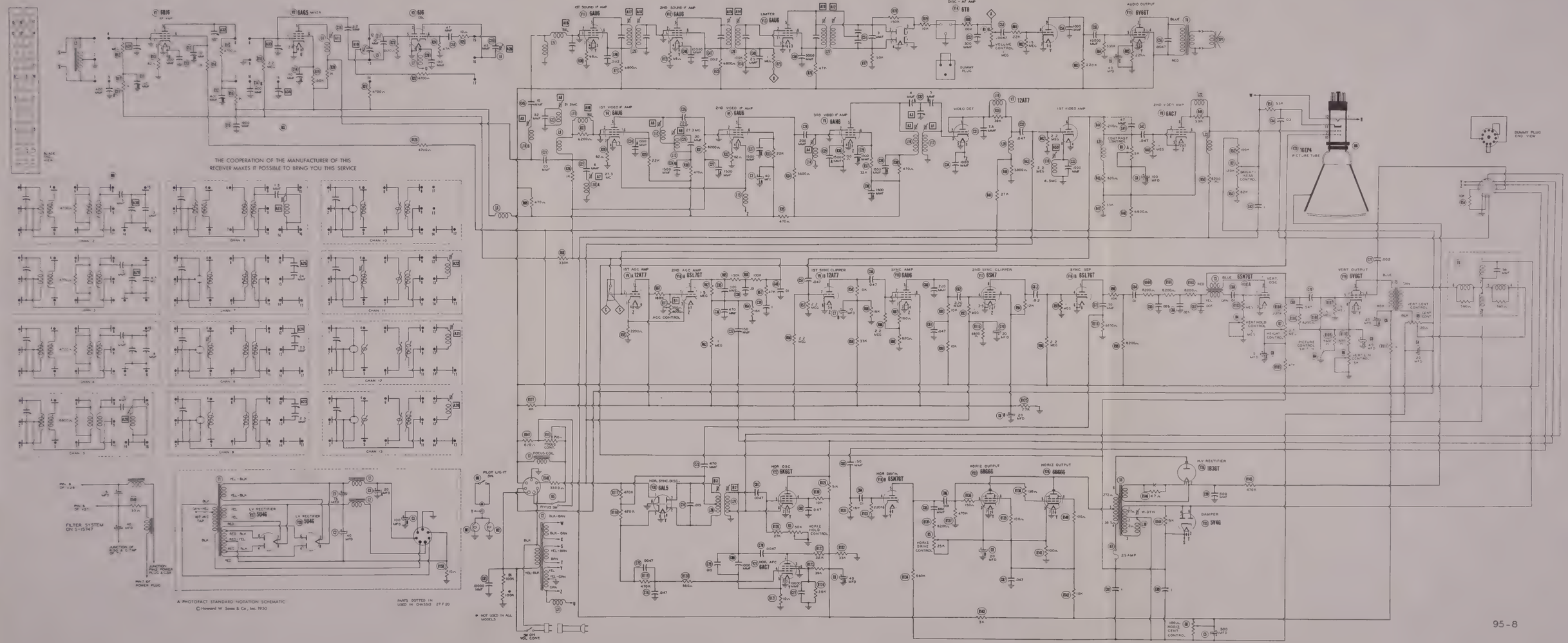
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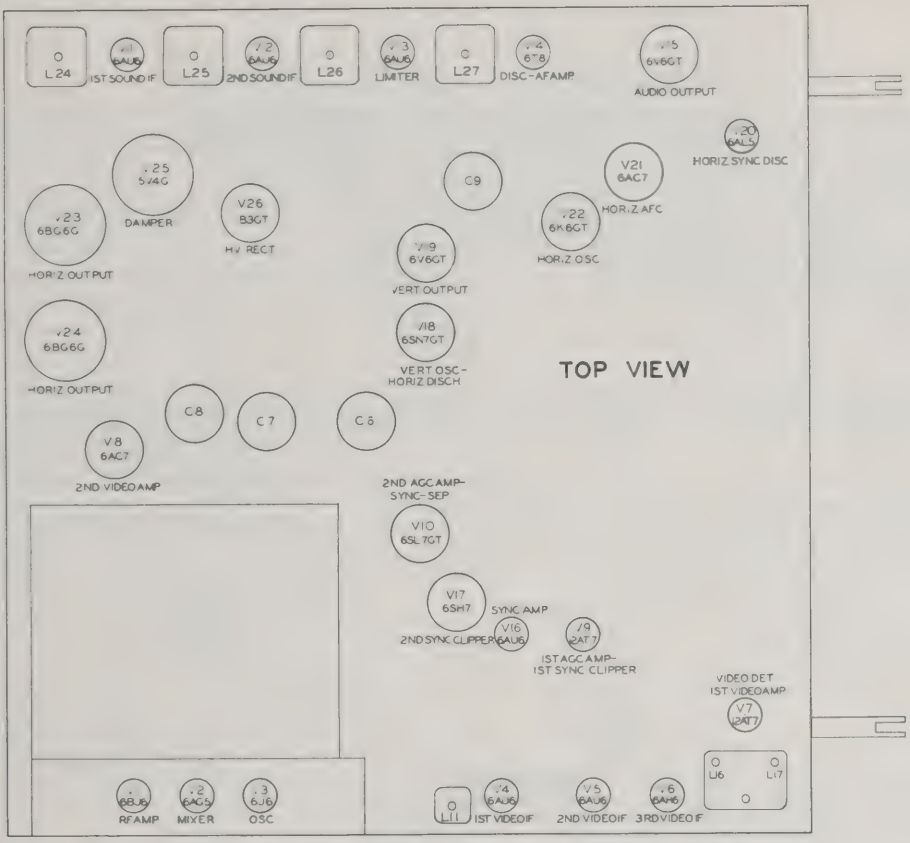
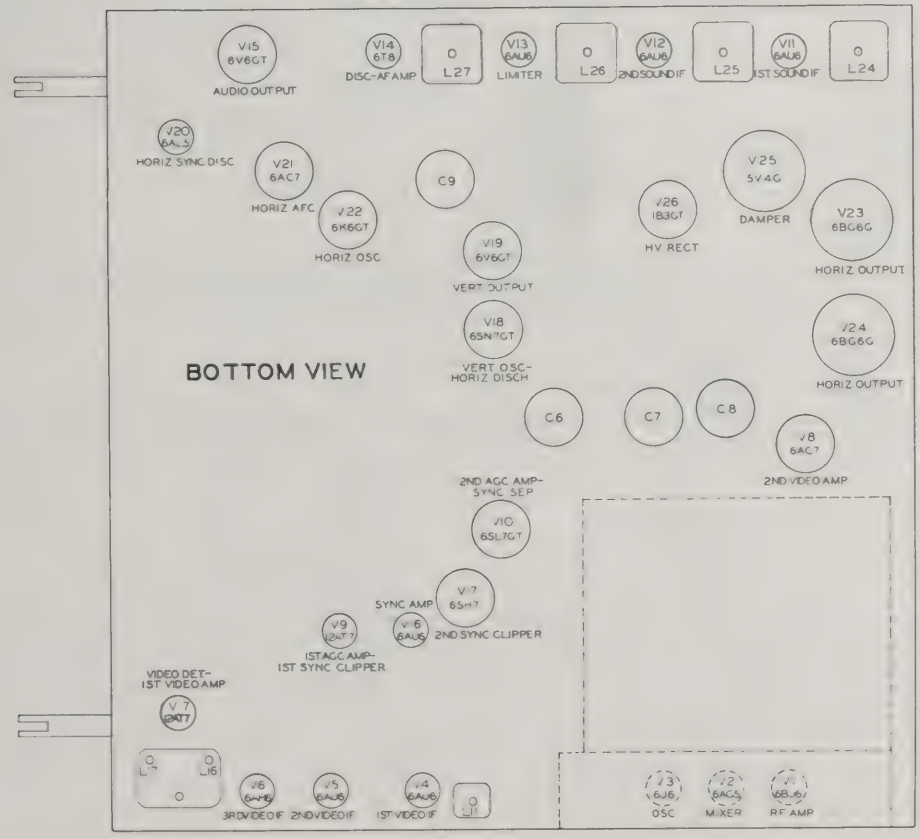
PARTS DOTTED IN
USED IN CHASSIS 27 F 20
* NOT USED IN ALL MODELS
95-8

CHASSIS TOP VIEW

CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION





TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS--READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube (V22) from its socket.

VIDEO IF ALIGNMENT

Connect the negative lead from a 1 1/2 volt battery to test jack "C", connect the positive lead to chassis.
Remove the local oscillator tube (V3) from its socket to prevent erroneous indications.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	500MMF	High side to pin 1 (Grid) of 6AH6 (V6). Low side to chassis.	24MC (10MC SWP)	22.6MC 25.9MC	Any	Vert. Amp. thru 100KΩ to test jack "S". Low side to chassis.	A1, A2, A3	Adjust A1 and A2 to obtain pattern similar to figure 1 with peaks of equal amplitude. Adjust A3 to place the 25.9MC marker at the high frequency peak. Check the position of the 22.6MC marker. If necessary repeat adjustment of A1, A2, and A3.
2.	500MMF	High side to pin 1 (Grid) of 6AU6 (V5). Low side to chassis.	"	25.3MC	"	"	A4	Reduce sweep generator output until amplitude is approximately the same as that obtained in step 1. Adjust A4 for pattern and placement of 25.3MC marker as shown in figure 2.
3.	500MMF	High side to pin 1 (Grid) of 6AU6 (V4). Low side to chassis.	"	23.2MC 25.2MC	"	"	A5	Adjust for pattern and placement of 23.2MC marker as shown in figure 3.
4.	500MMF	"	"	27.3MC	"	"	A6, A7	Use maximum marker amplitude and adjust A6 and A7 so marker disappears in "notch" as shown in figure 3.
5.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	"	21.3MC	"	"	A8, A9	Adjust A8 and A9 for minimum marker indication at the 21.3MC point on response curve.
6.	Direct	"	"	21.3MC 23.2MC 25.1MC 25.8MC 27.3MC	"	"	A10, A11	Adjust A10 and A11 alternately for reasonably flat topped pattern with markers as shown in figure 4. The 25.8MC marker should be at 50% on the high frequency slope of the response curve.

SOUND IF ALIGNMENT

The sound IF transformers used in this receiver have specially designed slugs and require the use of a special alignment tool. (Zenith Part No. 68-7). Both slugs of each transformer are accessible from the hole in the top of the transformer.
The alignment wrench is partially inserted to adjust the top slug, and fully inserted to adjust the bottom slug.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	500MMF	High side to pin 1 (Grid) of 6AU6 (V13). Low side to chassis.	23.1MC (1MC SWP)	23.1MC	Any	Vert. Amp. to Point (A). Low side to chassis.	A12, A13	Adjust for maximum amplitude and symmetry as per figure 5 with 23.1MC marker at center. The peak to peak discriminator width is 450KC.
8.	500MMF	High side to pin 1 (Grid) of 6AU6 (V12). Low side to chassis.	"	"	"	Vert. Amp. to Point (B). Low side to chassis.	A14, A15	Adjust for maximum amplitude and symmetry as per figure 6.
9.	500MMF	High side to pin 1 (Grid) of 6AU6 (V11). Low side to chassis.	"	"	"	"	A16, A17	"
10.	500MMF	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	"	"	"	"	A18	"

TUNER ALIGNMENT

These receivers use one of two tuners, the S-15020, and S-15940. The latter, used in late production, is identified by a green disc type symbol painted on the tuner shelf and turret cover. Determine which tuner is the set to be aligned and use the alignment procedure for that tuner.

TUNER No. S-15940 OSCILLATOR ALIGNMENT

Replace the local oscillator tube (V13).
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
11.	Two 150Ω carbon res.	Across antenna terminals with 150Ω resistor in each lead.	197.75MC (Unmod.)	10	DC Probe to Point (A). Common to chassis.	A19	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
12.	"	"	215.75MC	13	"	A20	"
			209.75MC	12		A21	
			203.75MC	11		A22	
			191.75MC	9		A23	
			185.75MC	8		A24	
			179.75MC	7		A25	
13.	"	"	71.75MC	4	"	A26	"
14.	"	"	87.75MC	6	"	A27	"
			81.75MC	5		A28	
			65.75MC	3		A29	
			59.75MC	2		A30	

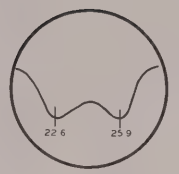


FIG.1

FIG.2

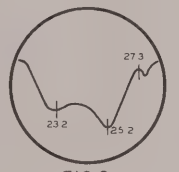


FIG.3

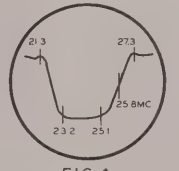


FIG.4

FIG.5

FIG.6

ALIGNMENT INSTRUCTIONS (CONT.)

TUNER No. S-15940 RF ALIGNMENT

Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
15.	Two 150Ω carbon res.	Across antenna terminals with 150Ω resistor in each lead.	69MC (10MC SWP)	67.25MC 71.75MC	4	Vert. Amp. to test jack "S". Low side to chassis.	A31, A32, A33	Adjust for maximum amplitude and symmetry as per figure 7 with markers as shown.
16.	"	"	195MC (10MC SWP)	193.25MC 197.75MC	10	"	A34	Adjust for maximum amplitude and symmetry as per figure 7. Note: The mixer plate coil (A31) will have to be retuned when the cover is removed, and again retuned when the cover is replaced. Check all channels and adjust the antenna coil adjustment if necessary. These adjustments are reached thru a hole in the rear of the tuner.

TUNER No. S-15020 OSCILLATOR ALIGNMENT

The trimmer X located in the plate circuit of the RF amplifier is for the purpose of compensating for the stray capacities in the circuit. This trimmer is pre-set at the factory and should not be adjusted in the field unless proper equipment is available.
Set the fine tuning control to the mid position of its range.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
17.	Two 150Ω carbon res.	Across antenna terminals with 150Ω in each lead.	197.75MC (Unmod.)	10	DC Probe to Point (A) Common to chassis.	A35	Insert a pointed tool thru one of the alignment slots and turn A36 until meter reads zero between the positive and negative peaks.
18.	"	"	179.75MC	7	"	A36	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
			185.75MC	8		A37	
			191.75MC	9		A38	
			203.75MC	11		A39	
			209.75MC	12		A40	
			215.75MC	13		A41	
19.	"	"	71.75MC	4	"	A42	"
20.	"	"	59.75MC	2	"	A43	
			65.75MC	3		A44	
			81.75MC	5		A45	
			87.75MC	6		A46	

TUNER No. S-15020 ANTENNA ALIGNMENT

Connect the negative lead of a 1.5 volt battery to test jack "C", connect the positive lead to chassis.
Set the fine tuning control to the mid-position of its range.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
21.	Two 150Ω carbon res.	Across antenna terminals with 150Ω in each lead.	213MC (10MC SWP)	211.25MC 215.75MC	13	Vert. Amp. to test jack "S". Low side to chassis (If scope is not calibrated use VTVM and attenuate sweep generator to give 1.5 to 2 volt reading.)	A47	Keep sweep generator attenuated so scope pattern does not exceed 3 volts peak to peak. Adjust trimmer for maximum amplitude and symmetry as per figure 7.
22.	"	"	207MC (10MC SWP)	205.25MC 209.75MC	12	"	A48	"
			201MC (10MC SWP)	199.25MC 203.75MC	11		A49	
			195MC (10MC SWP)	193.25MC 197.75MC	10		A50	
			189MC (10MC SWP)	187.25MC 191.75MC	9		A51	
			183MC (10MC SWP)	181.25MC 185.75MC	8		A52	
			177MC (10MC SWP)	175.25MC 179.75MC	7		A53	
			85MC (10MC SWP)	83.25MC 87.75MC	6		A54	
			79MC (10MC SWP)	77.25MC 81.75MC	5		A55	
			69MC (10MC SWP)	67.25MC 71.75MC	4		A56	
			63MC (10MC SWP)	61.25MC 65.75MC	3		A57	
			57MC (10MC SWP)	55.25MC 59.75MC	2		A58	

IMPORTANT: ALL OTHER ADJUSTMENTS ON THIS TUNER ARE PRE-SET AT THE FACTORY AND SHOULD NOT BE ADJUSTED IN THE FIELD.

4.5MC TRAP ADJUSTMENT

Adjustment of this trap is usually not necessary unless the unit has been tampered with or a component replaced.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT RF-VTVM	ADJUST	REMARKS
23.	.005MFD	High side to pin 7 (Grid) of 12AT7 (V7). Low side to chassis.	4.5MC (set very accurately)	Any	RF Probe to picture tube grid (pin 2 of V29). Common to chassis.	A59	Adjust for minimum reading on RF-VTVM

ZENITH MODELS G2951, R, G2952R,
-ROX (Ch. 29G20) 27T965R (Ch. 27F20)

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BJ6	-1VDC	0V.	6.3VAC	0V.	185VDC	110VDC	0V.		
V 2	6AG5	-3VDC	0V.	6.3VAC	0V.	190VDC	70VDC	0V.		
V 3	6J6	♦130VDC	▲87VDC	6.3VAC	0V.	▲§-1.3VDC	♦§-3.2VDC	0V.		
V 4	6AU6	-2.6VDC	0V.	6.3VAC	0V.	200VDC	130VDC	.8VDC		
V 5	6AU6	-.1VDC	0V.	6.3VAC	0V.	150VDC	130VDC	.8VDC		
V 6	6AH6	0V.	0V.	6.3VAC	0V.	212VDC	140VDC	1.7VDC		
V 7	12AT7	-.7VDC	-.7VDC	6.3VAC	0V.	0V.	90VDC	-1.3VDC	0V.	6.3VAC
V 8	6AC7	0V.	0V.	0V.	-.6VDC	0V.	90VDC	6.3VAC	150VDC	
V 9	12AT7	140VDC	-.3VDC	2.8VDC	6.3VAC	6.3VAC	1.8VDC	-.7VDC	0V.	0V.
V 10	6SL7GT	.3VDC 3VDC	0V.	2.8VDC	-2.1VDC	167VDC	0V.	6.3VAC	0V.	
V 11	6AU6	0V.	0V.	6.3VAC	0V.	135VDC	135VDC	.8VDC		
V 12	6AU6	0V.	0V.	6.3VAC	0V.	140VDC	140VDC	.7VDC		
V 13	6AU6	-.4VDC	0V.	6.3VAC	0V.	85VDC	55VDC	0V.		
V 14	6T8	-.4VDC	-.4VDC	.2VDC	0V.	6.3VAC	0V.	0V.	-.6VDC	80VDC
V 15	6V6GT	0V.	6.3VAC	207VDC	225VDC	0V.	0V.	0V.	9.5VDC	
V 16	6AU6	.2VDC	0V.	0V.	6.3VAC	125VDC	140VDC	8VDC		
V 17	6SH7	0V.	0V.	0V.	-2.2VDC	0V.	140VDC	6.3VAC	132VDC	
V 18	6SN7GT	-15VDC	160VDC 420VDC	0V.	-20VDC	50VDC	0V.	0V.	6.3VAC	
V 19	6V6GT	0V.	0V.	345VDC	345VDC	0V.	0V.	6.3VAC	28VDC 40VDC	
V 20	6AL5	-2.5VDC	-8.3VDC	0V.	6.3VAC	-3VDC	0V.	-6.6VDC		
V 21	6AC7	0V.	0V.	0V.	-1.9VDC	0V.	110VDC	6.3VAC	135VDC	
V 22	6K6GT	0V.	0V.	150VDC	160VDC	-18VDC	380VDC	6.3VAC	.1VDC	
V 23	6BG6G	205VDC	6.3VAC	13VDC	0V.	-.7VDC	-.7VDC	0V.	205VDC	TOP CAP *
V 24	6BG6G	205VDC	6.3VAC	13VDC	6.3VAC	-.7VDC	-.7VDC	0V.	205VDC	TOP CAP *
V 25	5V4G	0V.	495VDC	490VDC	380VDC	0V.	380VDC	0V.	495VDC	
V 26	1B3GT		* DO NOT MEASURE.							
V 27	5U4G	0V.	340VDC	0V.	310VAC	0V.	310VAC	0V.	340VDC	
V 28	5U4G	0V.	410VDC	0V.	380VAC	310VDC	380VAC	0V.	410VDC	
V 29	16EP4	■225VDC	150VDC	PIN 10 490VDC	PIN 11 225VDC	PIN 12 ■225VDC				

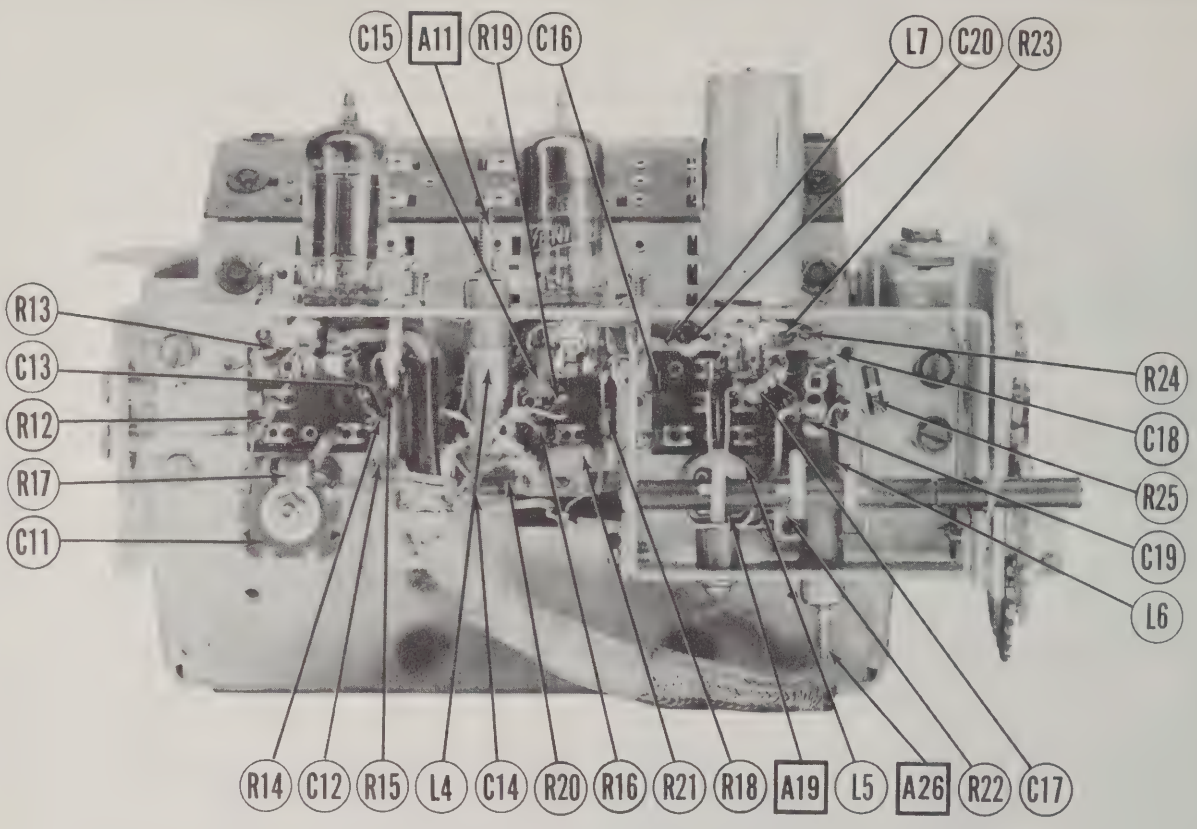
§ TAKEN WITH VACUUM TUBE VOLTMETER.
▲ TAKEN WITH RECEIVER TUNED TO CHANNEL #4.
▲ TAKEN WITH RECEIVER TUNED TO CHANNEL #10.
* DO NOT MEASURE.
■ 6.3VAC MEASURED ACROSS FILAMENTS.

RESISTANCE READINGS

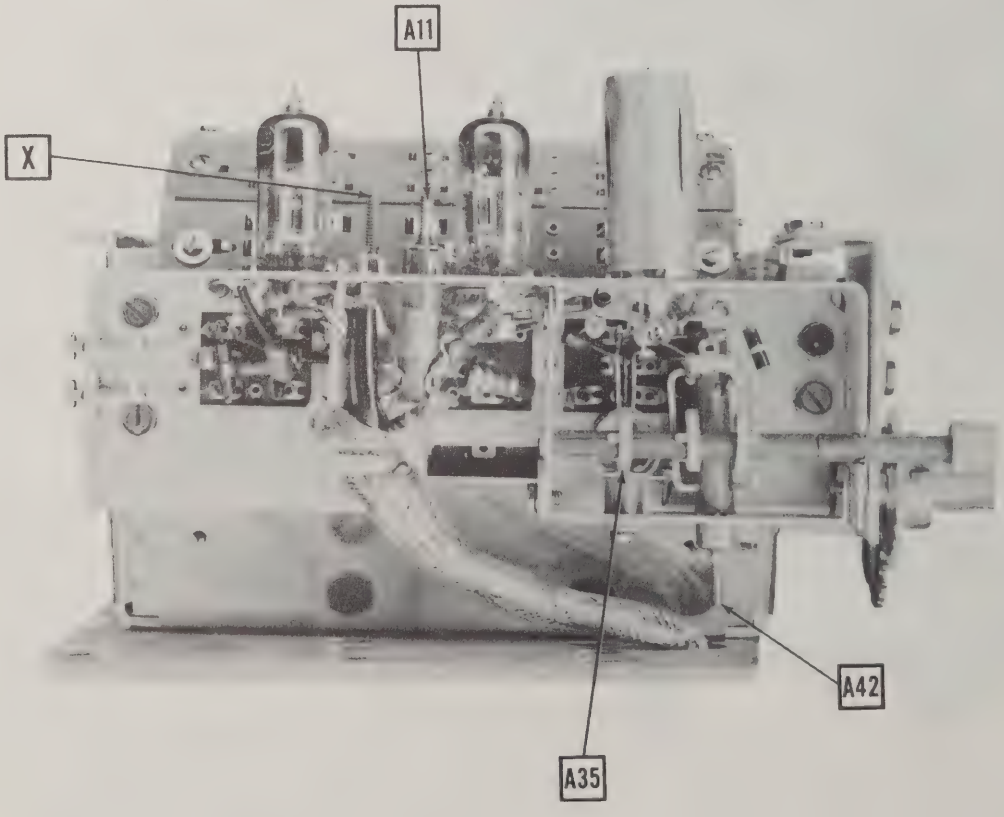
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BJ6	2.3 Meg.	82Ω	.1Ω	0Ω	†2KΩ	†10KΩ	0Ω		
V 2	6AG5	3.5 Meg.	0Ω	.1Ω	0Ω	†2KΩ	†150 KΩ	0Ω		
V 3	6J6	♦†6KΩ	▲†10KΩ	.1Ω	0Ω	▲1.5KΩ	♦47KΩ	0Ω		
V 4	6AU6	1.8 Meg.	0Ω	.1Ω	0Ω	†1.5KΩ	†23KΩ	82Ω		
V 5	6AU6	1.8 Meg.	0Ω	.1Ω	0Ω	†7KΩ	†23KΩ	82Ω		
V 6	6AH6	.1Ω	0Ω	.1Ω	0Ω	†2KΩ	†34KΩ	150Ω		
V 7	12AT7	3.9KΩ	3.9KΩ	.1Ω	0Ω	0Ω	†7KΩ	1.1 Meg.	0Ω	.1Ω
V 8	6AC7	0Ω	0Ω	0Ω	1 Meg.	0Ω	†6KΩ	.1Ω	#9.5KΩ	
V 9	12AT7	†4.5KΩ	31KΩ	2.2KΩ	.1Ω	.1Ω	†26KΩ	1.3 Meg.	0Ω	0Ω
V 10	6SL7GT	4KΩ 350Ω	1.5 Meg.	2.2KΩ	700KΩ	†18KΩ	0Ω	.1Ω	0Ω	
V 11	6AU6	.1Ω	0Ω	.1Ω	0Ω	†7.5KΩ	†7.5KΩ	68Ω		
V 12	6AU6	.1Ω	0Ω	.1Ω	0Ω	†7.5KΩ	†7.5KΩ	68Ω		
V 13	6AU6	100KΩ	0Ω	.1Ω	0Ω	†48KΩ	†48KΩ	0Ω		
V 14	6T8	150KΩ	150KΩ	300KΩ	0Ω	.1Ω	0Ω	0Ω	15 Meg.	†220KΩ
V 15	6V6GT	0Ω	.1Ω	†1000Ω	†600Ω	330KΩ	1 Meg.	0Ω	220Ω	
V 16	6AU6	2.2 Meg.	0Ω	0Ω	.1Ω	†20KΩ	†4.5KΩ	1000Ω		
V 17	6SH7	0Ω	0Ω	0Ω	1 Meg.	0Ω	†4.5KΩ	.1Ω	†16KΩ	
V 18	6SN7GT	2.5 Meg.	#4 Meg. #300KΩ	0Ω	220KΩ	#560KΩ	0Ω	0Ω	.1Ω	
V 19	6V6GT	0Ω	0Ω	#2KΩ	#2KΩ	750KΩ	0Ω	.1Ω	6.5KΩ 1.5KΩ	
V 20	6AL5	2.5KΩ	470KΩ	0Ω	.1Ω	1 Meg.	0Ω	470KΩ		
V 21	6AC7	0Ω	0Ω	0Ω	1.5 Meg.	10Ω	#30KΩ	.1Ω	#25KΩ	
V 22	6K6GT	Inf.	0Ω	#8KΩ	#13KΩ	75KΩ	#140Ω	.1Ω	17Ω	
V 23	6BG6G	#10KΩ	.1Ω	100Ω	Inf.	470KΩ	470KΩ	0Ω	#10KΩ	TOP CAP #15KΩ
V 24	6BG6G	#10KΩ	.1Ω	100Ω	.1Ω	470KΩ	470KΩ	0Ω	#10KΩ	TOP CAP #15KΩ
V 25	5V4G	Inf.	#15KΩ	#60KΩ	#150Ω	Inf.	#150Ω	Inf.	#15KΩ	
V 26	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP #15KΩ
V 27	5U4G	Inf.	10KΩ	Inf.	21Ω	Inf.	20Ω	Inf.	10KΩ	
V 28	5U4G	Inf.	25KΩ	Inf.	22Ω	10KΩ	24Ω	Inf.	25KΩ	
V 29	16EP4	70KΩ	#9.5KΩ	PIN 10 #15KΩ	PIN 11 100KΩ	PIN 12 70KΩ				

† MEASURED FROM PIN 8 OF V27.
# MEASURED FROM PIN 8 OF V28.
♦ TAKEN WITH RECEIVER TUNED TO CHANNEL # 4.
▲ TAKEN WITH RECEIVER TUNED TO CHANNEL # 10.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.

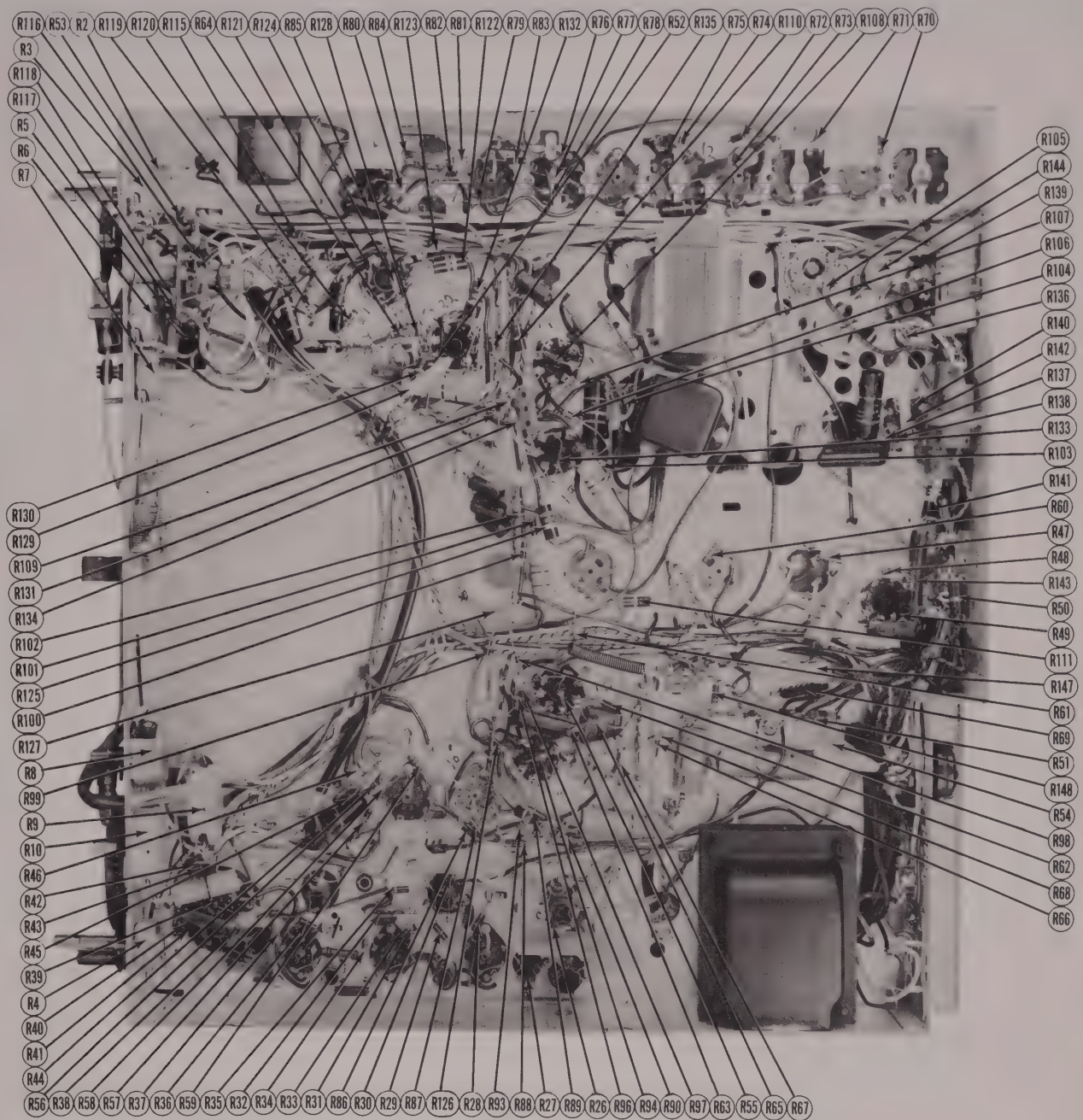


RF TUNER - S-15940



RF TUNER - S-15020

CHASSIS BOTTOM VIEW–CAPACITOR IDENTIFICATION

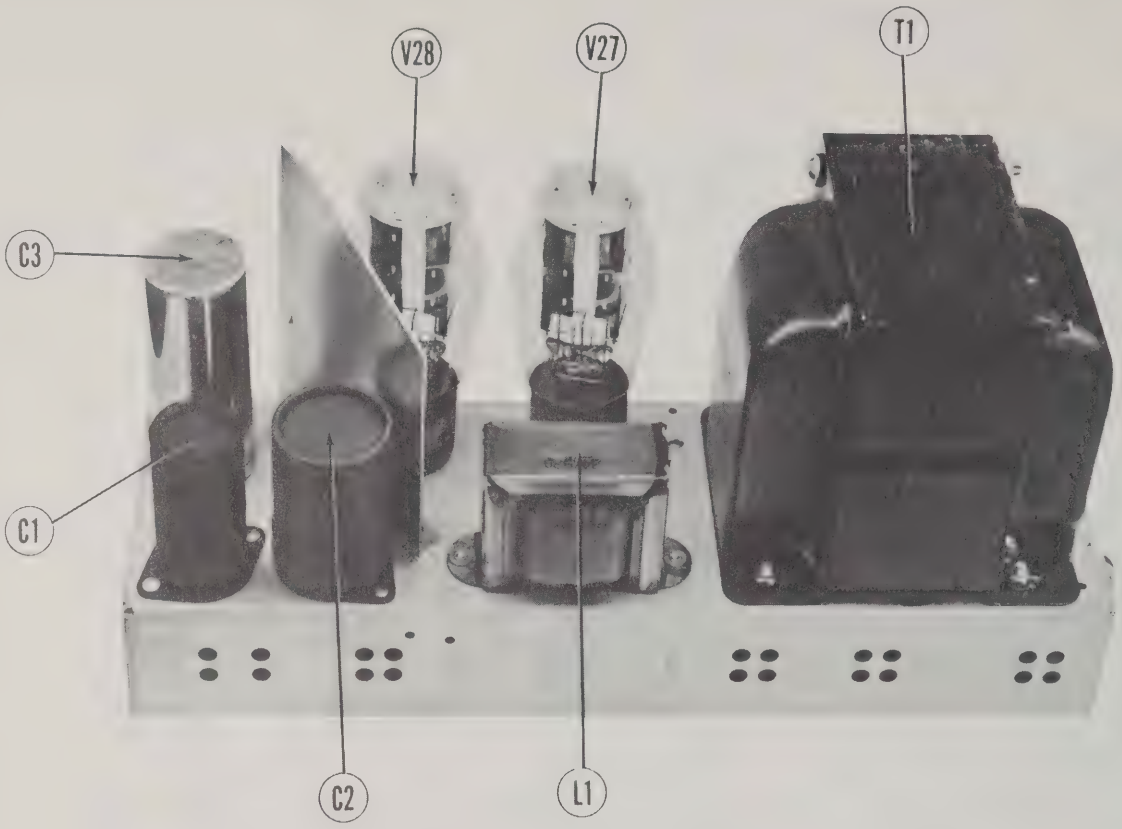


CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

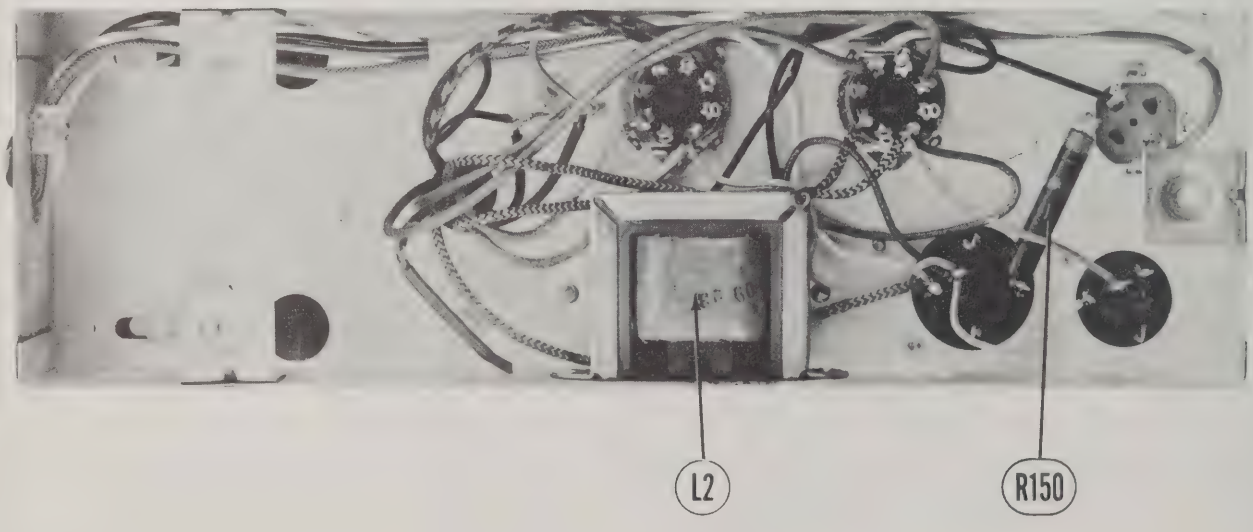
ZENITH MODELS G2951, R, G2952R, -ROX (Ch. 29G20) 27T965R (Ch. 27F20)

SCHEMATIC—TUNER S-15020

95-8



POWER SUPPLY CHASSIS-TOP VIEW



POWER SUPPLY CHASSIS-BOTTOM VIEW

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA ZENITH PART No.	REPLACEMENT DATA STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amp.	6BJ6	6BJ6	7CM	
B	RF Amp.	6AG5	6AG5	7BD	
V2	Mixer	6AG5	6AG5	7BD	
V3	Oscillator	6J6	6J6	7BF	
V4	1st Video IF	6AU6	6AU6	7BK	
V5	2nd Video IF	6AU6	6AU6	7BK	
V6	3rd Video IF	6AH6	6AH6	7BK	
V7	Video Det. -1st Video Amp.	12AT7	12AT7	9A	
V8	2nd Video Amp.	6AC7	6AC7	8N	
V9A	1st AGC Amp. -1st Sync. Clipper	12AT7	12AT7	9A	Chassis 29G20
B	AGC Amp.	6SL7GT	6SL7GT	8BD	Chassis 27F20
V10	2nd AGC Amp. - Sync. Sep.	6SL7GT	6SL7GT	8BD	Chassis 29G20
V11	1st Sound IF	6AU6	6AU6	7BK	
V12	2nd Sound IF	6AU6	6AU6	7BK	
V13	Limiter	6AU6	6AU6	7BK	
V14	Disc. -AF Amp.	6T8	6T8	9E	
V15	Audio Output	6V6GT	6V6GT	7AC	
V16A	Sync. Amp.	6AU6	6AU6	7BK	Chassis 29G20
B	1st Sync. Clipper-Sync. Amp.	6SN7GT	6SN7GT	8BD	Chassis 27F20
V17A	2nd Sync. Clipper	6SH7	6SH7	8BK	Chassis 29G20
B	2nd Sync. Clipper-Sync. Sep.	12AT7	12AT7	9A	Chassis 27F20
V18	Vert. Osc. -Hor. Disch.	6SN7GT	6SN7GT	8BD	
V19	Vert. Output	6V6GT	6V6GT	7AC	
V20	Hor. Sync. Disc.	6AL5	6AL5	6BT	
V21	Hor. AFC	6AC7	6AC7	8N	
V22	Hor. Osc.	6K6GT	6K6GT	7S	
V23	Hor. Output	6BG6G	6BG6G	5BT	
V24	Hor. Output	6BG6G	6BG6G	5BT	Chassis 29G20
V25	Damper	5V4G	5V4G	5L	
V26	HV Rectifier	1B3GT	1B3GT	3C	
V27	LV Rectifier	5U4G	5U4G	5T	
V28	LV Rectifier	5U4G	5U4G	5T	
V29A	Picture Tube	16EP4	16EP4		
B	Picture Tube	12KP4	12KP4	12D	
C	Picture Tube	12LP4	12LP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1	15	250	22-1826	AF3G			TVL-70	Filter
C2	40	400	22-1827	AF8J			TVL-8	Filter
C3A	20	475	22-1828	AFH4X20G			TVL-19	▬ Filter
B	100	300						▲ Filter
C4	20	25	22-1904	PRS25/25			TVA-6	Vert. Cent. Cont. Bypass
C5	500	3		PRS6/500			TVA-27	Hor. Cent. Cont. Bypass
C6A	20	475	22-1836	AFH4X4G8A			TVL-31	▬ Vert. Output Decoupling
B	20	300						■ Decoupling
C	40	25						▲ Output Cathode Bypass
C7A	40	350	22-2037	AFH8H2E			TVL-69	▬ Decoupling
B	10	200						▲ 1st Sync. Clipper Dec.
C8A	10	475	22-2053	AFH2X20E8B			D4503	▬ Vert. Osc. Decoupling
B	100	200						■ Decoupling
C	40	50						▲ Vert. Output Cath. Bypass
C9A	40	450	22-2033	AFH8J4A			TVL-45	■ Decoupling
B	20	25					TVA-6	▲ Hor. Output Cath. Bypass
C10	20	25	22-1903	PRS25/25			TVA-6	Bias Filter
C11A	400							Fixed Trimmer
B	110							AGC Filter
C12A	110							RF Screen Bypass
B	400							RF Plate Decoupling
C13	1000		22-1888	GP1000M	D6-102	GP2L-001		RF Filament Bypass
C14A	110							Mixer Screen Bypass
B	400							Fixed Trimmer
C15	1000		22-1888	GP1000M	D6-102	GP2L-001		RF Bypass
C16	2.2		22-1765		D2-2.2			Osc. Coupling
C17	10		22-1895	GP10M	D6-100	GP1K-10		Osc. Grid Cap.
C18	47		22-1876	GP47M	D6-470	N080-338-47		Osc. Grid Cap.
C19	45		22-2065	CN45JN030		N030-338-45		Fixed Trimmer
C20	100		22-1947	GP100M	D6-101	GP1K-100		Osc. Filament Bypass
C21	100		22-1669	GP100M	D6-101	GP1K-100		IF Coupling
C22	6		22-1869	CN6DN080		N080K-6		Fixed Trimmer
C23	52		22-1870	CN52JN080		N080K-52		Fixed Trimmer
C24A	1500		105-17	GP1500M	D6-152	GP2L-0015	29C6	1st V. IF Screen Bypass
B	1500			GP1500M	D6-152	GP2L-0015		1st V. IF Plate Decoupling
C25	30		22-1871	CN30JN080		N080-338-33		Fixed Trimmer
C26	200		22-1668	GP200M	D6-201	GP2K-200	1FM-32	IF Coupling
C27A	1500		105-17	GP1500M	D6-152	882-2 x 0015	29C6	AGC Filter
B	1500			GP1500M	D6-152			1st V. IF Screen Bypass
C28	200		22-1668	GP200M	D6-201	GP2K-200	1FM-32	IF Coupling
C29A	1500		105-17	GP1500M	D6-152	882-2 x 0015	29C6	3rd V. IF Cathode Bypass
B	1500			GP1500M	D6-152			3rd V. IF Screen Bypass
C30A	1500		105-17	GP1500M	D6-152	882-2 x 0015	29C6	Decoupling
B	1500			GP1500M	D6-152			3rd V. IF Plate Decoupling
C31	7.5		22-1852	GP10M	D6-100	NPOK-8.2	MS-41	V. Diode Filter
C32	.047	400	22-1775	P488-047			TM-15	Video Coupling
C33	1000		27-108	GP1000M	D6-102	GP2L-001	MS-21	Fixed Trimmer
C34	1000		22-1888	GP1000M	D6-102	GP2L-001	1FM-21	V. Det. -1st V. Amp. Fil. Byp.
C35	1000	500	22-1839	1467-001	D6-102	GP2L-001	1FM-21	AGC Filter
C36	470		22-1138	GP470M	D6-471	GP2K-470	1FM-35	2nd AGC Amp. Plate Dec. *
C37	150	500	22-1137	1468-00015	D6-151	GP2K-150	1FM-315	Hor. Sweep Coupling *
C38	.01	200	22-1809	P488-01	D6-103	821-01	TM-11	AGC Filter
C39	.1	200	22-1777	P288-1			TM-1	AGC Filter
C40	.01	200	22-1809	P488-01	D6-103	821-01	TM-11	AGC Filter

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No.	RATING CAP	RATING VOLT	ZENITH PART No.	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C41	47	500	22-1532	1468-00005	D6-470	GP1K-47	1FM-45	Peaking †
C42	.047	600	22-1844	P688-047			TM-15	Video Coupling
C43	.1	600	22-1841	P688-1			TM-1	Pic. Tube Cath. Dec.
C44	.03	600	22-1901	P688-03			TM-13	Pic. Tube Cath. Bypass
C45	10		22-1895	CN10DN030	D2-10	N030K-10	MS-41	Fixed Trimmer
C46	.0012	600	22-1880	P688-0015	D6-122	GP2L-0015	TM-21	1st S. IF Decoupling
C47	.0012	600	22-1880	P688-0015	D6-122	GP2L-0015	TM-21	2nd S. IF Decoupling
C48	10000		22-3	BPD-10	D6-103	831-01	36C1	2nd S. IF Fil. Bypass
C49	35		22-1887	GP25M	D6-250	GP1K-25	MS-425	Limiter Grid Filter
C50	5000		22-1706	BPD-5	D6-502	811-006	29C1	Limiter Decoupling
C51	3		22-1693			N15GK-3		Fixed Trimmer
C52	500		22-1703	1468-0005	D6-501	GP2K-500	1FM-35	De-emphasis
C53	.0047	400	22-1811	P688-0047	D6-472	811-005	TM-25	Audio Coupling †
C54	1000		22-1886	GP1000M	D6-102	GP2L-001	1FM-21	De-emphasis
C55	10000		22-3	BPD-10	D6-103	811-01	36C1	Audio Coupling
C56	.0047	600	22-1782	P688-0047	D6-472	811-005	TM-25	Output Plate Bypass
C57	.047	600	22-1844	P688-047			TM-15	Sy. c. Coupling
C58	.047	600	22-1844	P688-047			TM-15	Sync. Coupling
C59	.1	600	22-1841	P688-1			TM-1	Sync. Coupling †
C60	330	500	22-182	1468-00025	D6-221	GP2K-320	1FM-325	Sync. Amp. Plate Bypass #
C61	.047	600	22-1844	P688-047			TM-15	Sync. Amp. Plate Dec.
C62	320	500	22-182	1468-00025	D6-221	GP2K-320	1FM-325	Sync. Coupling
C63	.02	600	22-1813	P688-02			TM-13	Sync. Coupling
C64	.01	600	22-1779	P688-01	D6-103	831-01	TM-11	Vert. Sync. Coupling
C65	.005	200	22-1842	P688-005	D6-502	811-005	TM-25	Integrator Net.
C66	.005	200	22-1842	P688-005	D6-502	811-005	TM-25	Integrator Net.
C67	.005	200	22-1842	P688-005	D6-502	811-005	TM-25	Integrator Net.
C68	.01	600	22-1843	P688-01	D6-103	821-01	TM-11	Vert. Osc. Grid Cap.
C69	.047	600	22-1844	P688-047			TM-15	Vert. Discharge
C70	.1	600	22-1841	P688-1			TM-1	Vert. Sweep Coupling
C71	.002	600	22-1845	P688-002	D6-202	GP2M-002	TM-23	Isolation
C72	150	500	22-1137	1468-00015	D6-151	GP2K-150	1FM-315	Differentiator Net.
C73	470	500	22-1138	1468-0005	D6-471	GP2K-500	1FM-35	Hor. Sync. Coupling
C74	.015	200	22-1850	P288-015				Fixed Trimmer
C75	.0047	400	22-1847	P688-0047	D6-472	811-005	TM-25	AFC Filter
C76	.047	200	22-1778	P288-047			TM-15	AFC Filter
C77	10000		22-3	BPD-01	D6-103	811-01	36C1	Hor. AFC Screen Bypass
C78	.0047	600	22-1849	P688-0047	D6-472	811-005	TM-25	Hor. AFC Coupling
C79	.015	200	22-2083	P288-015				Phase Shifter
C80	1000			GP1000M	D6-102	GP2L-001	1FM-21	Phase Shifter *
C81	.0047	200	22-1847	P688-0047	D6-472	GP2M-0047	TM-25	Hor. Osc. Grid Cap.
C82	.047	600	22-1844	P688-047			TM-15	Hor. Osc. Screen Bypass
C83	150	500	22-1137	1468-00015	D6-151	GP2K-150	1FM-315	Differentiator Net.
C84	.01	400	22-1846	P488-01	D6-103	821-01	TM-11	Hor. Sweep Coupling
C85	680	500	22-2034		D6-681	GP2K-680	1FM-37	Hor. Discharge
C86	.001	400	22-1851	P688-001	D6-102	GP2L-001	TM-21	Hor. Sweep Coupling
C87	.047	600	22-1844	P688-047			TM-15	Hor. Output Screen Bypass
C88	.1	600	22-1841	P688-1			TM-1	Damper Filter
C89	.1	600	22-1841	P688-1			TM-1	Damper Filter
C90	500	20000	22-1832					HV Filter
C91	10000		22-3	P488-01	D6-103	821-01	36C1	Line Filter
C92A	4		105-20					Fixed Trimmer
B	5							Fixed Trimmer

* Not used in all models.
† Used only in chassis 27F20.
‡ Some models use .01MFD in this application.
# Chassis 27F20 uses 100MMF in this application.

CONTROLS

ITEM No	RATING RESISTANCE	RATING WATTS	ZENITH PART No.	REPLACEMENT DATA IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	5000Ω	1	63-1667				Contrast control-panel
B	1 Meg.	1					Volume control and switch-rear
R2A	120KΩ	½	63-2061	Q11-128	AM-49-S	AN-40	Brightness control
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Attach to R2A per instructions
R3A	50KΩ	½	63-1672	Q11-123	AM-44-S	AN-31	Horiz. hold control
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Attach to R3A per instructions
R4A	1 5 Meg.	½	63-2025	Q11-138	AM-83-S	AN-75	Vert. hold control-See note 1
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Attach to R4A per instructions
R5A	250Ω	½	63-1675	Q11-120		AN-26	Horiz. drive control
B	Shaft		Not Req.	SQ		AK-1	Attach to R5A per instructions
R6A	5000Ω	½	63-1674	Q11-114	AM-19-S	AN-10	Vert. linearity control
B	Shaft		Not Req.	SQ	KSS-3 *	AK-1	Attach to R6A per instructions
R7	3 5 Meg.	½	63-2036				Height control-See note 2
R8	1000	2	63-1669	W-100 *	43-100 *	V-121 *	Horiz. centering control-Wire Wound
R9	20Ω	4	63-1670	W-20 x 10 #			Vert. centering control-Wire Wound, tapped ⑥ 10Ω
R10	750Ω	4	63-2009		10-750		Focus control-Wire Wound
R11	3500 to 4000Ω	1	63-1690				AGC delay control-Wire Wound

Use S-3 sleeve bushing as spacer nut, to keep control away from chassis.
* File slot in shaft to duplicate original.
Note 1. Some models use a 1.5 Meg. control, Part No. 63-1671.
Note 2. Some models use a 2 Meg. control, Part No. 63-1673.

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	ZENITH PART No.	REPLACEMENT DATA IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ARE ± 10% UNLESS OTHERWISE STATED.
R12	1 Meg. 20%	½	63-1812	BTS-1 Meg.	RF Grid
R13	82Ω	½	63-1740		RF Cathode
R14	1000Ω	½	63-1785	BTS-1000	RF Screen Decoupling
R15	4700Ω	½	63-1793		RF Plate Coil Shunt
R16	1000Ω	½	63-1785	BTS-1000	RF Plate Decoupling
R17	1000Ω	½	63-1785	BTS-1000	AGC Network
R18	2.2 Meg. 20%	½	63-1926	BTS-2.2 Meg.	Mixer Grid
R19	150KΩ	½	63-1876		Mixer Screen
R20	1000Ω	½	63-1785	BTS-1000	Mixer Plate Decoupling
R21	4700Ω	1	63-943	BTA-4700	Osc. Plate
R22	4700Ω	1	63-943	BTA-4700	Osc. Plate
R23	1500Ω	½	63-1792	BTS-1500	Osc. Grid
R24	47KΩ	½	63-1795		Osc. Grid
R25	10Ω	½	63-1787		Parasitic Supp.

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	RATING WATTS	ZENITH PART No.	REPLACEMENT DATA IRC PART No.	IDENTIFICATION CODES
R26	1000Ω 20%	½	63-1786	BTS-1000	AGC Network
R27	62000Ω 5%	½	63-1818		1st Video IF Coil Shunt
R28	82Ω	½	63-1740		1st Video IF Cathode
R29	22KΩ	½	63-1758		1st Video IF Screen-See Note 3
R30	470Ω	½	63-1772	BTS-470	1st Video IF Plate Decoupling
R31	82000Ω 5%	½	63-1823	BTS-8200-5%	2nd Video IF Grid
R32	82Ω	½	63-1740		2nd Video IF Cathode
R33	22KΩ	½	63-1758		2nd Video IF Screen-See Note 3
R34	56000Ω 5%	½	63-1816	BTS-5600-5%	2nd Video IF Plate
R35	470Ω 20%	½	63-1772	BTS-470	2nd Video IF Plate Decoupling
R36	150Ω 20%	½	63-1751		3rd Video IF Cathode
R37	33KΩ	½	63-1848	BTS-33K	3rd Video IF Screen
R38	470Ω 20%	½	63-1772	BTS-470	3rd Video IF Plate Decoupling
R39	39KΩ	½	63-1852	BTS-39K	Peaking Coil Shunt
R40	39000Ω 5%	½	63-1809	BTS-3900-5%	Video Det. Load
R41	27KΩ	½	63-1845	BTS-27K	AGC Network
R42	2.2 Meg. 20%	½	63-1926	BTS-2.2 Meg.	1st Video Amp. Grid
R43	2.2 Meg. 20%	½	63-1926	BTS-2.2 Meg.	Bias Network
R44	1200Ω			BTS-1200	1st Video Amp. Plate-See Note 11
R45	8200Ω 5%	½	63-1781	BTS-8200-5%	1st Video Amp. Plate-See Note 10
R46	6800Ω	1	63-1067	BTA-6800	Decoupling-See Note 14
R47	33KΩ	½	63-1848	BTS-33K	Voltage Divider-See Note 17
R48	1 Meg. 20%	½	63-1912	BTS-1 Meg.	2nd Video Amp. Grid
R49	39KΩ	½	63-1852	BTS-39K	Peaking Coil Shunt
R50	62000Ω 5%	2	63-1579		2nd Video Amp. Plate
R51	33KΩ	½	63-1848	BTS-33K	Picture Tube Cathode
R52	100KΩ	½	63-1870	BTS-100K	Voltage Divider-See Note 4
R53	82KΩ	½	63-1866	BTS-82K	Voltage Divider
R54	10KΩ	7	63-1684	AB-10,000	Bleeder-Wire Wound
R55	2200Ω	½	63-1799	BTS-2200	1st AGC Amp. Cathode - See note 5
R56	2.2 Meg. 20%	½	63-1926	BTS-2.2 Meg.	Bias Network
R57	2.2 Meg. 20%	½	63-1926	BTS-2.2 Meg.	1st Sync. Clipper Grid
R58	10KΩ	½	63-1827	BTS-10K	1st Sync. Clipper Plate-See Note 6
R59	33KΩ	½	63-1848	BTS-33K	1st Sync. Clipper Plate Decoupling-See Note 7
R60	18KΩ	½	63-1838	BTS-18K	Voltage Divider
R61	180KΩ	½	63-1880	BTS-180K	2nd AGC Amp. Grid-See Note 8
R62	1.5 Meg. 20%	½	63-1919	BTS-1.5 Meg.	2nd AGC Amp. Plate
R63	1 Meg.	½	63-1912	BTS-1 Meg.	2nd AGC Amp. Plate Decoupling-See Note 7
R64	18KΩ	½	63-1838	BTS-18K	Voltage Divider
R65	150KΩ	½	63-1876	BTS-150K	AGC Filter Network
R66	100KΩ 20%	½	63-1870	BTS-100K	AGC Filter Network
R67	47KΩ 20%	½	63-1856	BTS-47K	AGC Filter Network
R68	330KΩ 20%	½	63-1891	BTS-330K	AGC Network
R69	470Ω	1	63-1222	BW-1-470	Decoupling-Wire Wound
R70	680 20%	½	63-1727		1st Sound IF Cathode
R71	6800Ω	2	63-1968	BT-2-6800	1st Sound IF Decoupling
R72	68Ω 20%	½	63-1737		2nd Sound IF Cathode
R73	6800Ω	2	63-1968	BT-2-6800	2nd Sound IF Decoupling
R74	100KΩ	½	63-1869		Limiter Grid
R75	1 Meg.	½	63-1912		Series Test Point
R76	47KΩ	1	63-1194		Limiter Decoupling
R77	150KΩ	½	63-1876	BTS-150K	Disc. Diode Load
R78	150KΩ	½	63-1876	BTS-150K	Disc. Diode Load
R79	10KΩ 20%	½	63-1828	BTS-10K	De-emphasis
R80	100KΩ	½	63-1869	BTS-100K	De-emphasis
R81	22KΩ 20%	½	63-1842	BTS-22K	Tone Compensation
R82	15 Meg. 20%	½	63-1961	BTS-15 Meg.	AF Grid
R83	220KΩ	½	63-1883	BTS-220K	AF Plate
R84	330KΩ	½	63-1890	BTS-330K	Output Grid
R85	220Ω	1	63-1227	BW-1-220	Output Cathode
R86	2.2 Meg. 20%	½	63-1926	BTS-2.2 Meg.	Sync. Amp. Grid
R87	180Ω	½	63-1754	BW-½-180	Sync. Amp. Cathode-See Note 9
R88	820Ω	½	63-1782	BTS-820	Sync. Amp. Cathode-See Note 10
R89	10KΩ	1	63-1071	BTA-10K	Sync. Amp. Plate-See Note 11
R90	10KΩ	1	63-1071	BTA-10K	Sync. Amp. Plate Decoupling
R91	1000Ω	½	63-1785	BTS-1000	1st Sync. Clipper Cathode-See Note 12
R92	10KΩ	½	63-1827	BTS-10K	Differentiator-See Note 12
R93	1 Meg. 20%	½	63-1912	BTS-1 Meg.	2nd Sync. Clipper Grid-See Note 13
R94	12KΩ	½	63-1831	BTS-12K	2nd Sync. Clipper Plate
R95	15KΩ	1	63-1065	BTA-15K	Voltage Divider-See Note 12
R96	2.2 Meg. 20%	½	63-1926	BTS-2.2 Meg.	Bias Network-See Note 7
R97	1 Meg. 20%	½	63-1912	BTS-1 Meg.	Sync. Sep. Grid
R98	10KΩ	½	63-1827	BTS-10K	Sync. Sep. Plate-See Note 14
R99	8200Ω	½	63-1824	BTS-8200	Sync. Sep. Plate-See Note 14
R100	8200Ω	½	63-1824	BTS-8200	Integrator
R101	8200Ω	½	63-1824	BTS-8200	Integrator
R102	8200Ω	½	63-1824	BTS-8200	Integrator
R103	1 Meg. 5%	½	63-1910	BTS-1 Meg. 5%	Vert. Osc. Grid
R104	220KΩ	½	63-1883	BTS-220K	Vert. Osc. Plate
R105	47KΩ 20%	½	63-1856	BTS-47K	Vert. Osc. Plate Decoupling
R106	8200Ω	½	63-1824	BTS-8200	Vert. Peaking
R107	1.5 Meg. 20%	½	63-1919	BTS-1.5 Meg.	Vert. Output Grid
R108	1.5 Meg.	½	63-1918	BTS-1.5 Meg.	Vert. Output Grid-See Note 7
R109	56000Ω 5%	½	63-1817	BTS-5600-5%	Vert. Output Cathode-See Note 7
R110	1500Ω	1	63-1967	BTA-1500	Vert. Output Cathode
R111	1000Ω	1	63-965	BTA-1000	Vert. Output Decoupling
R112	1800Ω	2	63-1620	BT-2-1800	Vert. Output Plate-See Note 12
R113	5600Ω	2	63-1193	BT-2-5600	Vert. Output Decoupling-See Note 12
R114	2700Ω	2	63-1189	BW-2-2700	Voltage Divider-Wire Wound-See Note 12
R115	6800Ω	½	63-1820	BTS-6800	Bias Network
R116	6800Ω	½	63-1820	BTS-6800	Feedback
R117	470KΩ 5%	½	63-1896	BTS-470K-5%	Horiz. Sync. Disc. Load
R118	470KΩ 5%	½	63-1896	BTS 470K-5%	Horiz. Sync. Disc. Load
R119	470KΩ 20%	½	63-1898	BTS-470K	Horiz. AFC Filter Network
R120	560Ω	½	63-1775	BTS-560	Horiz. AFC Grid
R121	10Ω	1	63-1701		Horiz. AFC Cathode
R122	22KΩ	2	63-1566	BT-2-22K	Horiz. AFC Plate
R123	39KΩ	½	63-1852	BTS-39K	Horiz. AFC Screen
R124	56KΩ	½	63-1859	BTS-56K	Voltage Divider
R125	27KΩ	2	63-947	BT-2-27K	Bleeder-See Note 7
R126	4700Ω 20%	½	63-1813	BTS-4700	Decoupling
R127	4000Ω	5	63-2017	AB-4000	Filter-Wire Wound
R128	27KΩ	½	63-1845	BTS-27K	Horiz. Osc. Grid
R129	5000Ω	5	63-1533	AB-5000	Horiz. Osc. Plate-Wire Wound
R130	10KΩ	1	63-1071	BTA-10K	Horiz. Osc. Screen
R131	18KΩ	½	63-1838	BTS-18K	Differentiator
R132	33KΩ	2	63-1485	BT-2-33K	Bleeder
R133	220KΩ 20%	½	63-1884	BTS-220K	Horiz. Discharge Grid

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	RATING WATTS	ZENITH PART No.	REPLACEMENT DATA IRC PART No.	IDENTIFICATION CODES
R134	560KΩ	½	63-1901	BTS-560K	Horiz. Discharge Plate
R135	8200Ω	½	63-1824	BTS-8200	Horiz. Peaking
R136	150Ω 20%	½	63-1751		Parasitic Supp.
R137	470KΩ 20%	½	63-1898	BTS-470K	Horiz. Output Grid
R138	150Ω 20%	½	63-1751		Parasitic Supp. -See Note 7
R139	100Ω 20%	½	63-1744		Parasitic Supp. -See Note 7
R140	100Ω 20%	½	63-1744		Parasitic Supp. -See Note 7
R141	100Ω	2	63-1973	BW-2-100	Horiz. Output Cathode-See Note 15
R142	10KΩ	5	63-2022	AB-10K	Horiz. Output Screen- Wire Wound
R143	3000Ω	10	63-2011	AB-3000	Filter-Wire Wound
R144	15KΩ	20	63-1679	DG-15,000	Damper Filter-Wire Wound
R145	470KΩ 20%	½	63-1898		HV Filter
R146	4.7Ω	2	63-1581		HV Rect. Filament-Wire Wound-See Note 12
R147	620Ω	10	63-1685	AB-600	Focus Coil Shunt-Wire Wound
R148	3300Ω	½	63-1606	BTS-3300	Bias Network
R149	33Ω	2	63-2015	BW-2-33	Filter-Wire Wound-See Note 16
R150	10Ω 5%	2	63-1580	BW-2-10-5%	Bias Network-Wire Wound

Note 3. Some models use 220Ω resistor in this application.
Note 4. Chassis 27F20 uses 120KΩ resistor in this application.
Note 5. Chassis 27F20 uses 10KΩ resistor in this application.
Note 6. Chassis 27F20 uses 470KΩ resistor in this application.
Note 7. Not used in chassis 27F20.
Note 8. Chassis 27F20 uses 330KΩ resistor in this application.
Note 9. Chassis 27F20 uses 470Ω resistor in this application.
Note 10. Chassis 27F20 uses 1000Ω resistor in this application.
Note 11. Chassis 27F20 uses 4700Ω resistor in this application.
Note 12. Used in chassis 27F20 only.
Note 13. Chassis 27F20 uses 2.2 Meg. resistor in this application.
Note 14. Chassis 27F20 uses 3300Ω resistor in this application.
Note 15. Chassis 27F20 uses 150Ω, 2 watt resistor in this application.
Note 16. Used in power supply chassis S-15747 only.
Note 17. Chassis 27F20 uses 8200Ω resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA ZENITH PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC ⑨ 2.54A	770VCT .210ADC & 640 VCT .195ADC	5VAC ⑨ 3A	5VAC ⑨ 3A	95-1115		P-3169	TP-390

TRANSFORMER (FILAMENT)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA ZENITH PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T2	117VAC ⑨ .76A	5VAC ⑨ 2A	6.3VAC ⑨ .6A	12.6VCT ⑨ 6A	95-1116			

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA ZENITH PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T3	55Ω	39Ω	95-1113	A-8121	A-4000	TBO-1	Vert. Block Osc. Trans.
T4A	370Ω	SEC. 1	S-15709 ④				Hor. Output Trans.
	Tap ⑨ 85Ω	4.8Ω Tap ⑨ .35Ω					
		SEC. 2 0Ω					
B	310Ω	SEC. 1	S-15911 ①				Hor. Output Trans.
	Tap ⑨ 38.5Ω	2.9Ω Tap ⑨ .2Ω					
		SEC. 2 0Ω					
T5A	590Ω	14Ω	95-1112 ②	A-8112 ⑤	A-3036	TSO-5 ⑤	Vert. Output Trans.
B	660Ω	10Ω	95-1166 ①	A-8115	A-3035	TSO-1	Vert. Output Trans.
T6A	14Ω		95-1110 ②	DY-1	MD-1		Hor. Deflection Coil
B	60Ω						Vert. Deflection Coil
T6A	14Ω		95-1185 ①	DY-1	MD-1		Hor. Deflection Coil
B	61Ω						Vert. Deflection Coil
T7A	310Ω		95-1111 ④		MF-1		Focus Coil
B	550Ω		95-1147 ①		MF-2		Focus Coil

① Used in chassis 29G20.
② Used in chassis 27F20.
⑤ Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA ZENITH PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T8	5.3KΩ	3.5Ω	590Ω	.6Ω	95-1114	A-3849	A-3019	RO-9 ④	④ Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA ZENITH PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
	FIELD	V. C. IMP.				
SP1A	PM	3.5Ω	49-649 ①	ST-120 ③ MOD. P10-S	10A31	① Used in chassis 29G20.
B	PM	3.5Ω	49-670 ②	ST-117 MOD. P8-T	8A31	② Used in chassis 27F20. ③ Replace output transformer to match 6-8Ω voice coil.
	CONE DIA.	V. C. DIA.				
SP2A	9 3/8"	3/4"	208-649 ① 208-670 ②			
B						

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ~)	ZENITH PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.210A	135Ω	3 Henries	95-1109	C-2325 ④	C-2974	TR-420 ④	④ Drill one new mounting hole.
L2	.195A	135Ω	3 Henries	95-1109	C-2325 ④	C-2974	TR-420 ④	

COILS (RF-IF)

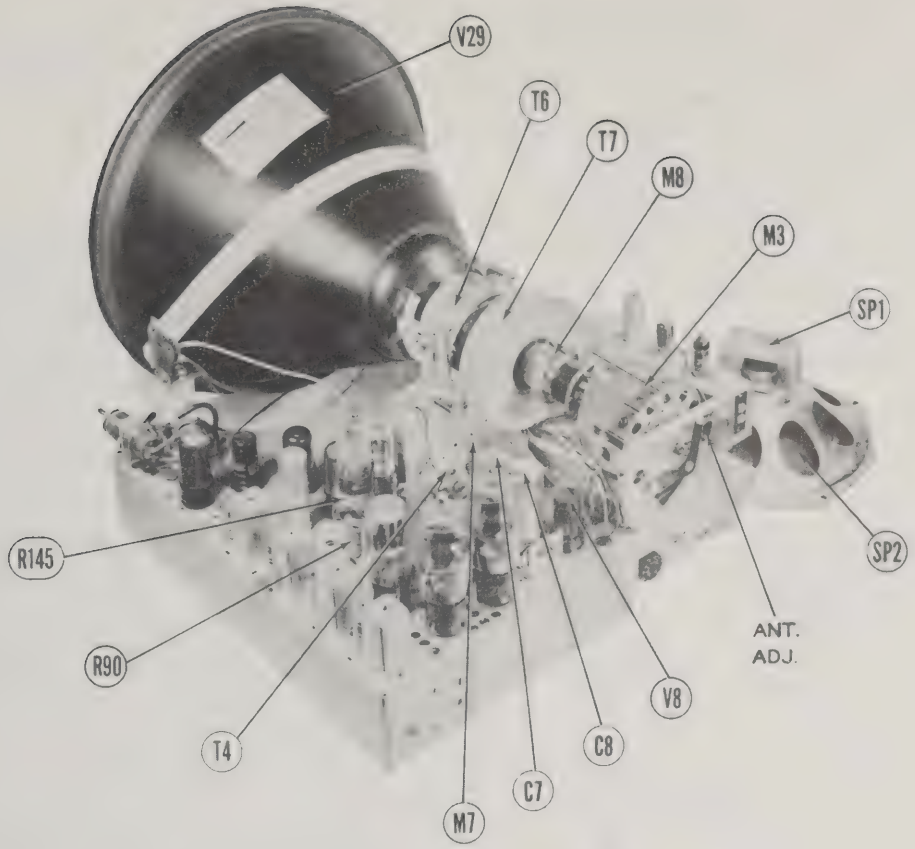
ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	ZENITH PART No.	MEISSNER PART No.	
L3	Ant. Input			S-15062		Not used on all models.
L4	Mixer Plate	.5Ω		S-15064		
L5	Osc. Coil	0Ω		S-15043		High-Band
L6	Osc. Coil	0Ω		S-15066		Low-Band
L7	Fil. Choke	0Ω		S-15065		
L8	RF Choke	1.3Ω		S-15128		
L9	Sound Trap	0Ω		S-15048		
L10A	Adjacent Channel Sound Trap	0Ω				Note: L10A and L10B are wound on same form and are replaced with Part #S-15727.
B	Sound Take-Off	0Ω				L10A is a video coupling coil when L11 is not used.
L11	Video Coupling	.2Ω		S-15049		Not used in all models.
L12	1st Video IF	.2Ω		S-15051		
L13	Adjacent Channel Sound Trap	0Ω		S-15053		
L14	2nd Video IF	.1Ω		S-15052		
L15	Fil. Choke	.1Ω		S-15060		
L16	3rd Video IF Primary	.2Ω		S-15055		
L17	3rd Video IF Secondary	.2Ω		S-15242		
L18	4.5MC Trap	0Ω		S-15057		
L19	Peaking	4.8Ω		S-15058		
L20	Peaking	7.5Ω		S-15059		
L21	Peaking	2Ω		S-15125		
L22	Peaking	9Ω		S-15127		
L23	Peaking	6Ω		S-15126		
L24	Sound Coupling	.1Ω		95-1955		
L25	1st Sound IF	.1Ω	.1Ω	95-1119		
L26	2nd Sound IF	.1Ω	.1Ω	95-1119		
L27	Disc. Trans.	.1Ω	.1Ω	95-1120		
L28	Horiz. Phase	68Ω		S-15041		
L29	Horiz. Freq.	60Ω				
L30	Width Cont.	.1Ω		S-16048		
L31	Fil. Choke	0Ω		20-255		

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					ZENITH PART No.		
M1	Bayonet	6-8	.25	Blue	100-36		Type #44
M2	Bayonet	6-8	.25	Blue	100-36		Type #44

MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M3A	RF Tuner Assembly	S-15940	Complete. Used in late production.
B	RF Tuner Assembly	S-15020	Complete
M4	Switch		Picture Height
M5	Switch	85-238	Focus current control
M6	Switch	85-448	Dial Lamp
M7	Fuse	136-16	.25A., 250V
M8	Ion Trap	S-15320	Used with sets using 12LP4
M9A	Channel Strip Assembly	S-15952	Channel #2
		S-15953	Channel #3
		S-15954	Channel #4
		S-15955	Channel #5
		S-15956	Channel #6 — Used in RF tuner S-15940
		S-15957	Channel #7
		S-15958	Channel #8
		S-15959	Channel #9
		S-15960	Channel #10
		S-15961	Channel #11
		S-15962	Channel #12
		S-15963	Channel #13
B	Channel Strip Assembly	S-15029	Channel #2
		S-15030	Channel #3
		S-15031	Channel #4
		S-15032	Channel #5
		S-15033	Channel #6 — Used in RF tuner S-15020
		S-15034	Channel #7
		S-15035	Channel #8
		S-15036	Channel #9
		S-15037	Channel #10
		S-15038	Channel #11
		S-15039	Channel #12
		S-15040	Channel #13
	Control Cover	24-479	Outer (R. H.)
	Control Cover	24-480	Outer (L. H.)
	Knob	46-771	Vert. hold and Horiz. hold
	Knob	46-773	Channel selector
	Knob	46-774	Contrast
	Knob	46-775	Volume, Cont. and On-Off
	Knob	46-783	Switch
	Indicator Prism	171-9	(2 used)
	Cover & Clip Assembly	S-15363	(R. H.)
	Cover & Clip Assembly	S-16052	(L. H.)
	Safety Glass	192-127	Models G2951, G2951R, G2952R, G2952ROX
	Safety Glass	192-122	Model 27T965R
	Contrast Indicator Disc.	27-113	
	Channel Indicator Disc.	27-112	



CHASSIS-TOP VIEW

HORIZONTAL FREQUENCY ADJUSTMENTS

1. Turn the horizontal hold control fully counter clockwise.
2. Adjust Horizontal Frequency adjustment B2 until picture locks in "sync."
3. Turn the horizontal hold fully clockwise. If picture loses "sync", slight readjustment is necessary. Readjustment is also necessary if receiver loses sync when the channel selector switch is turned to another channel and then returned to the original channel.

HORIZONTAL PHASE ADJUSTMENTS

Turn adjustment screw B3 and the picture will move to the right or left side of the raster. When B3 is properly adjusted the picture is moved farthest to the right. A broad peak is noted at this point.

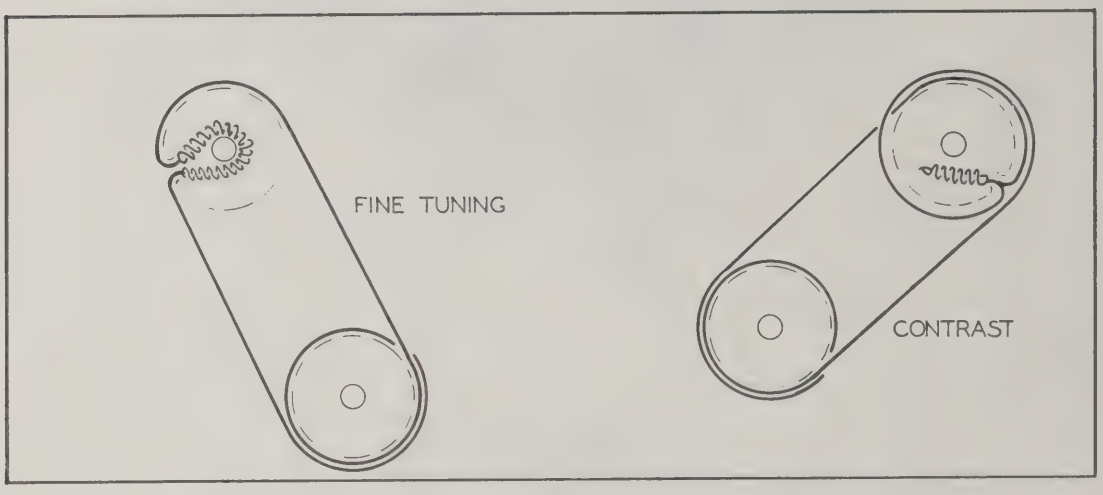
AGC ADJUSTMENTS

The performance of the AGC circuit is checked and adjusted by applying a known voltage to the video detector test jack "S" and noting the corresponding voltage at the AGC test jack "C". To adjust the AGC circuit to the correct operating point proceed as follows:

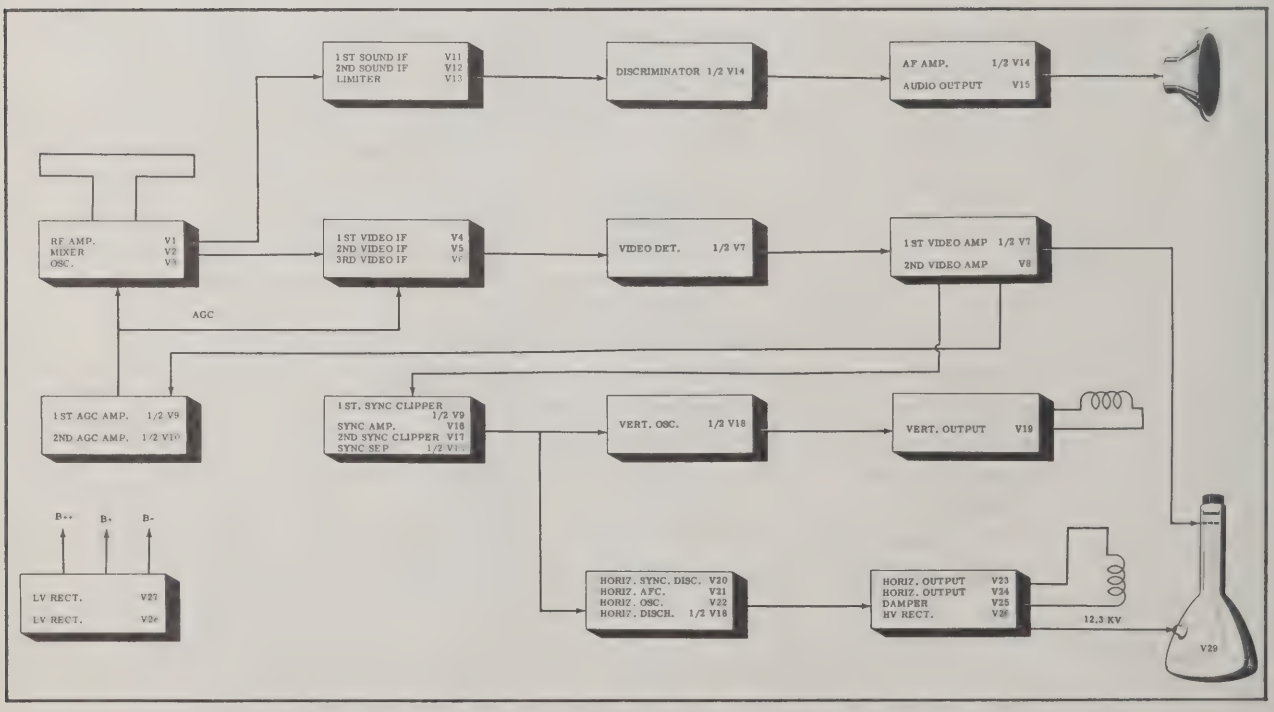
1. Turn channel selector switch to a locally unused channel. Disconnect the antenna and short the antenna terminals.
2. Apply -1.5 volts to test jack "S" (Positive to chassis). This voltage may be obtained from the center arm of a high value potentiometer with the outside terminals across a 3 volt battery.
3. Connect VTVM from test jack "C" to chassis.
4. Adjust B1 until -3.8 volt reading is obtained on VTVM.
5. Readjustment input to test jack "S" to -2 volts. The corresponding voltage on the VTVM connected to test jack "C" should be -6 to -8 volts.

DISASSEMBLY INSTRUCTIONS

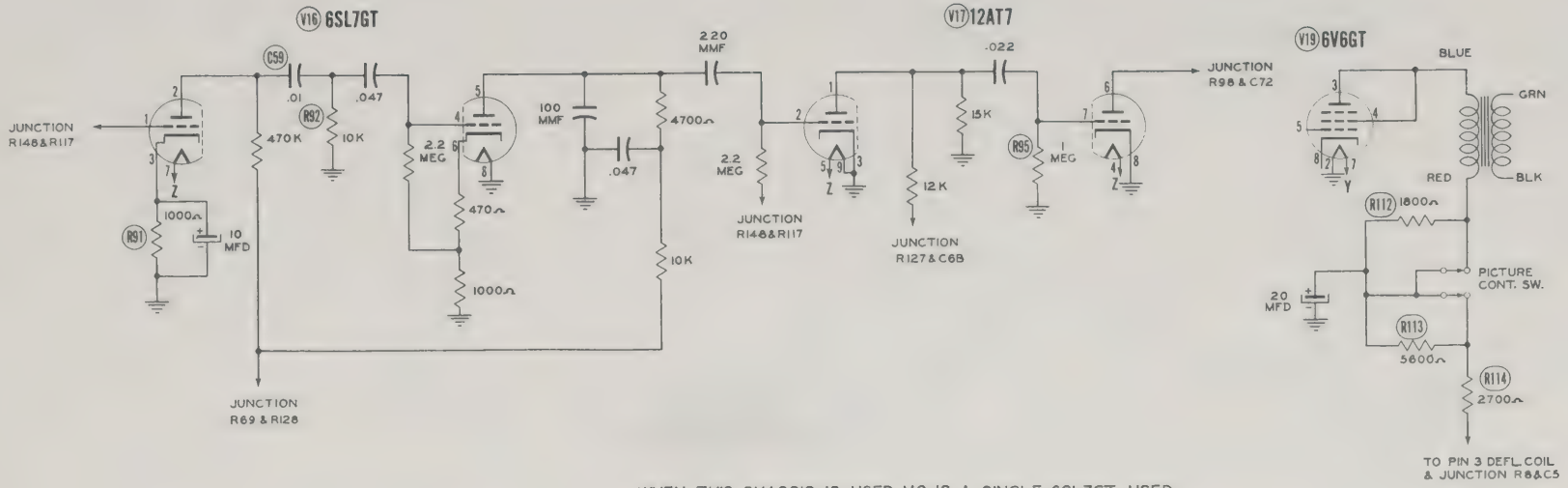
1. Remove two large and four small push-on type control knobs.
2. Pull out control plate marked "Picture Control." Remove two screws holding switch. Feed switch thru hole to chassis.
3. Remove four screws holding rear cover. Remove cover.
4. Remove power supply plug from TV chassis.
5. Remove front safety switch plug from TV chassis.
6. Remove speaker leads from speaker.
7. Remove four 3/8" hex head bolts holding TV chassis. Remove chassis.
8. Remove three 3/8" hex head bolts holding power supply chassis. Remove chassis.
9. Remove four 11/32" hex nuts holding speaker. Remove speaker.



DRIVE CORD STRINGING



BLOCK DIAGRAM



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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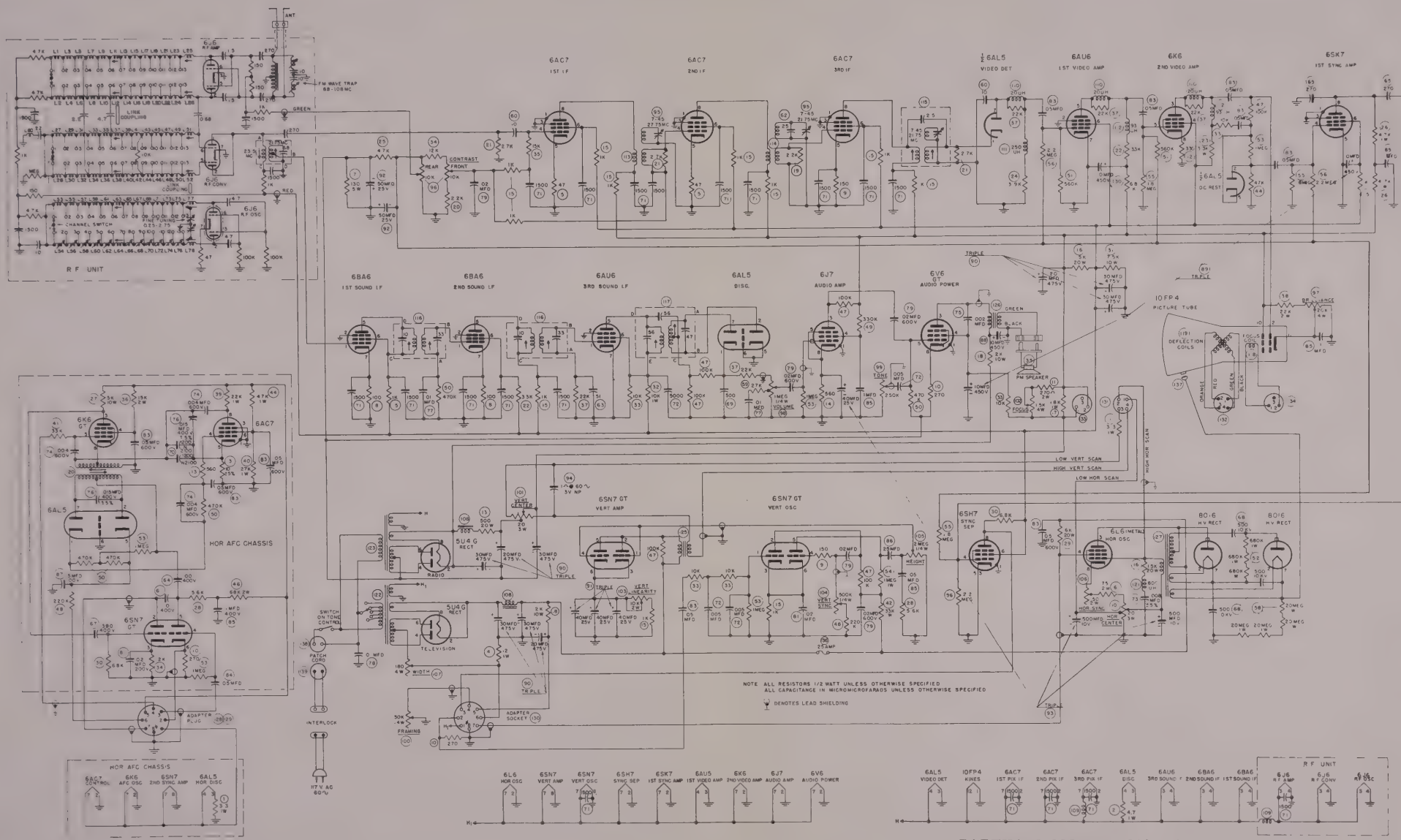
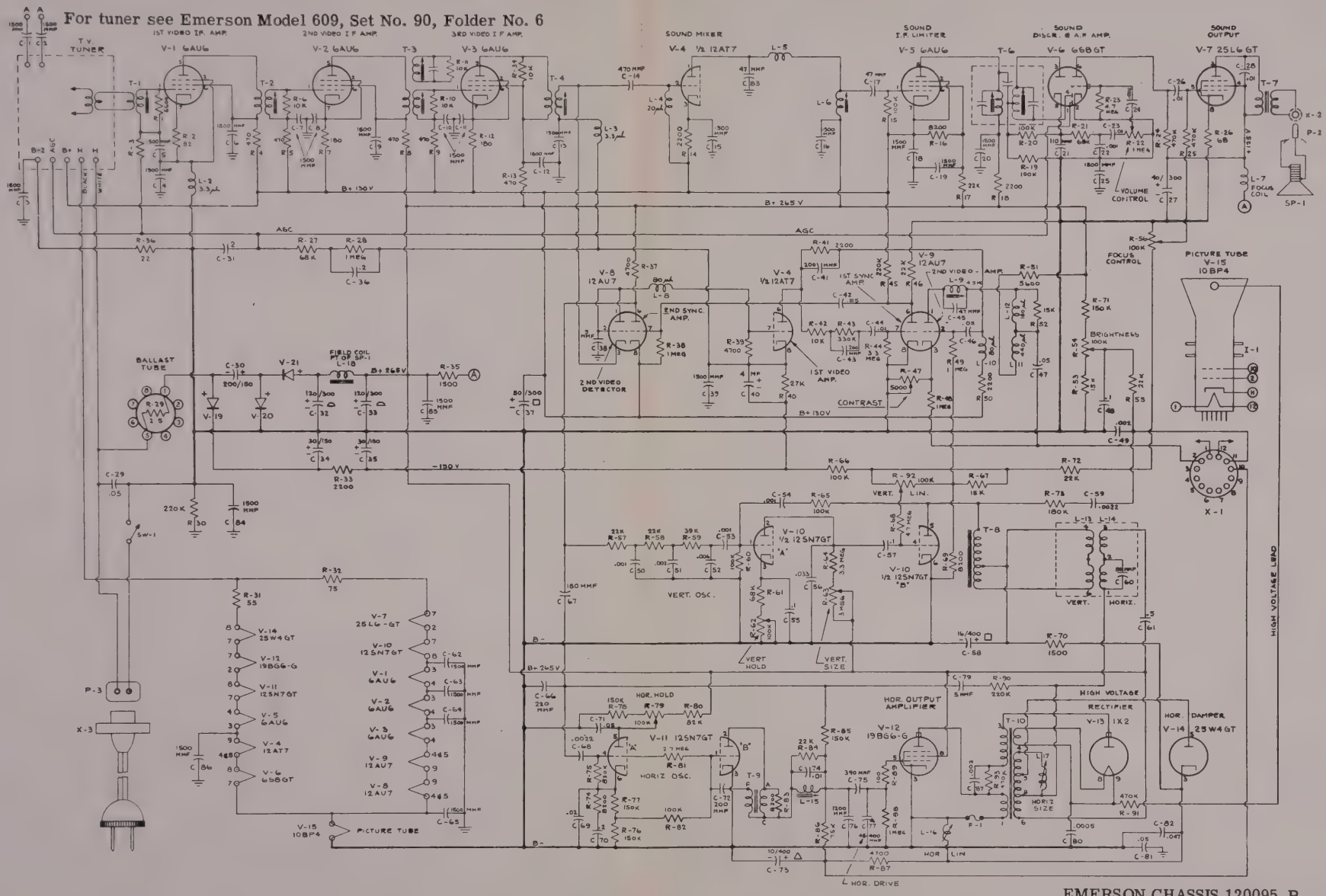
WHEN THIS CHASSIS IS USED V9 IS A SINGLE 6SL7GT USED IN LIEU OF V9A & V10A. NO V10 IS USED ON THIS CHASSIS. HORIZ. OUTPUT TUBES V23 & V24 CONNECTED IN PARALLEL, ARE REPLACED BY A SINGLE 6BG6G V23. NO V24 IS USED ON THIS CHASSIS

95-8

ALTERNATE CIRCUITS-CHASSIS 27F20



CAPEHART MODELS 610P, 651P, 661P



EMERSON CHASSIS 120095-B

PRELIMINARY DATA

SET 95A FOLDER 1, 3

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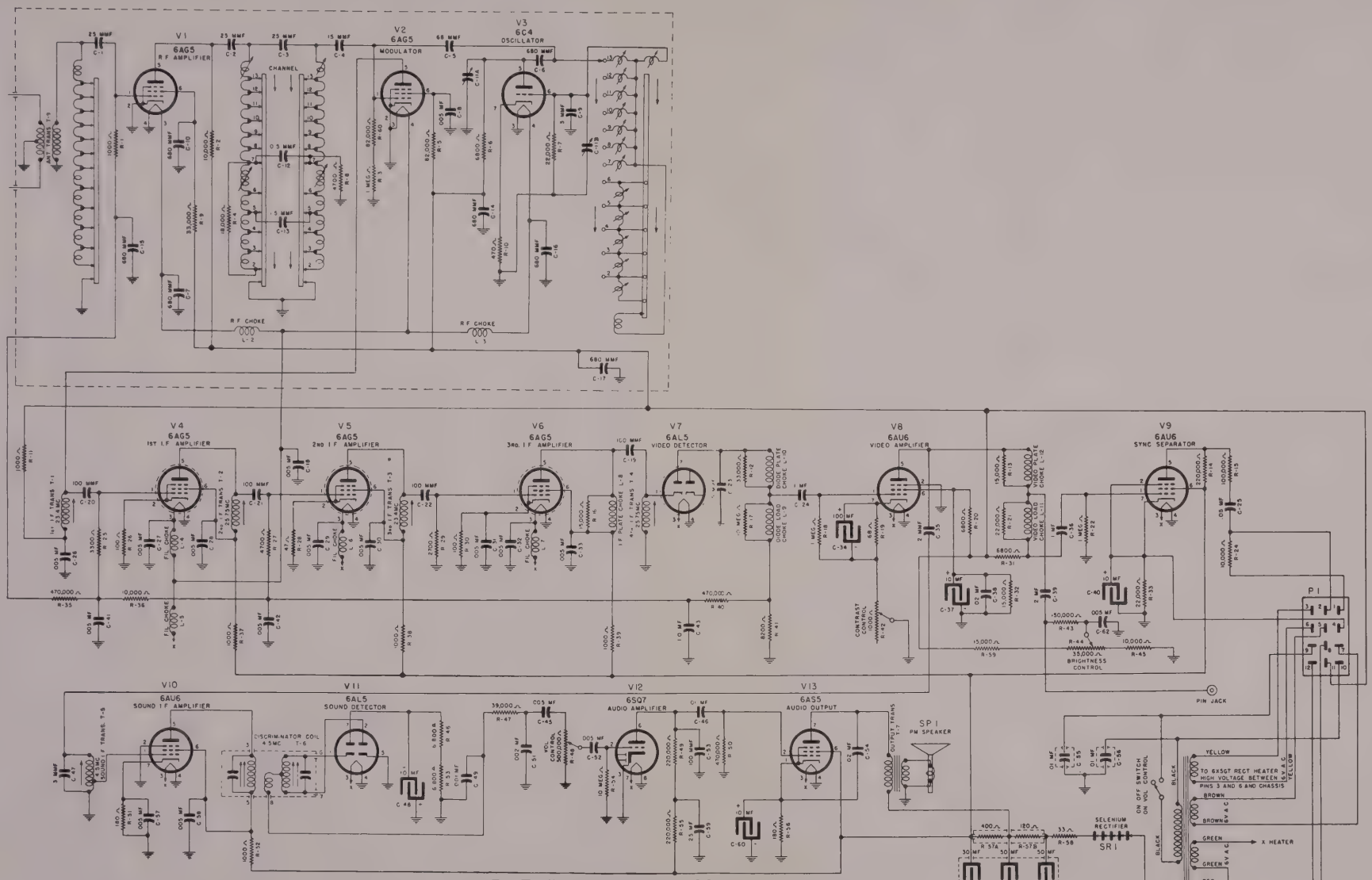
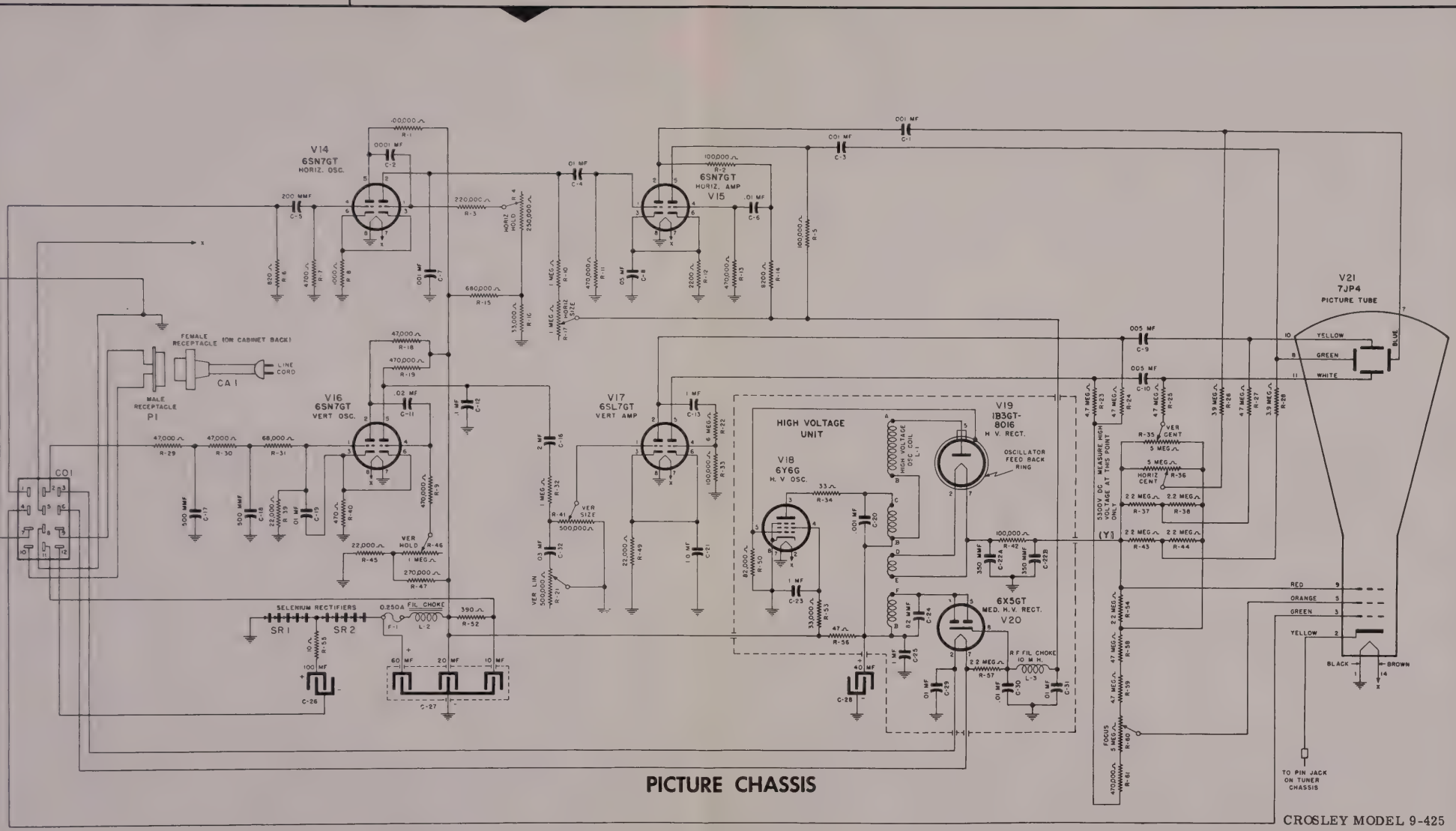


R. F. TUNER AND MAIN CHASSIS

CROSLEY MODEL 9-425



PICTURE CHASSIS

CROSLEY MODEL 9-425

PRELIMINARY DATA

SET 95A FOLDER 2

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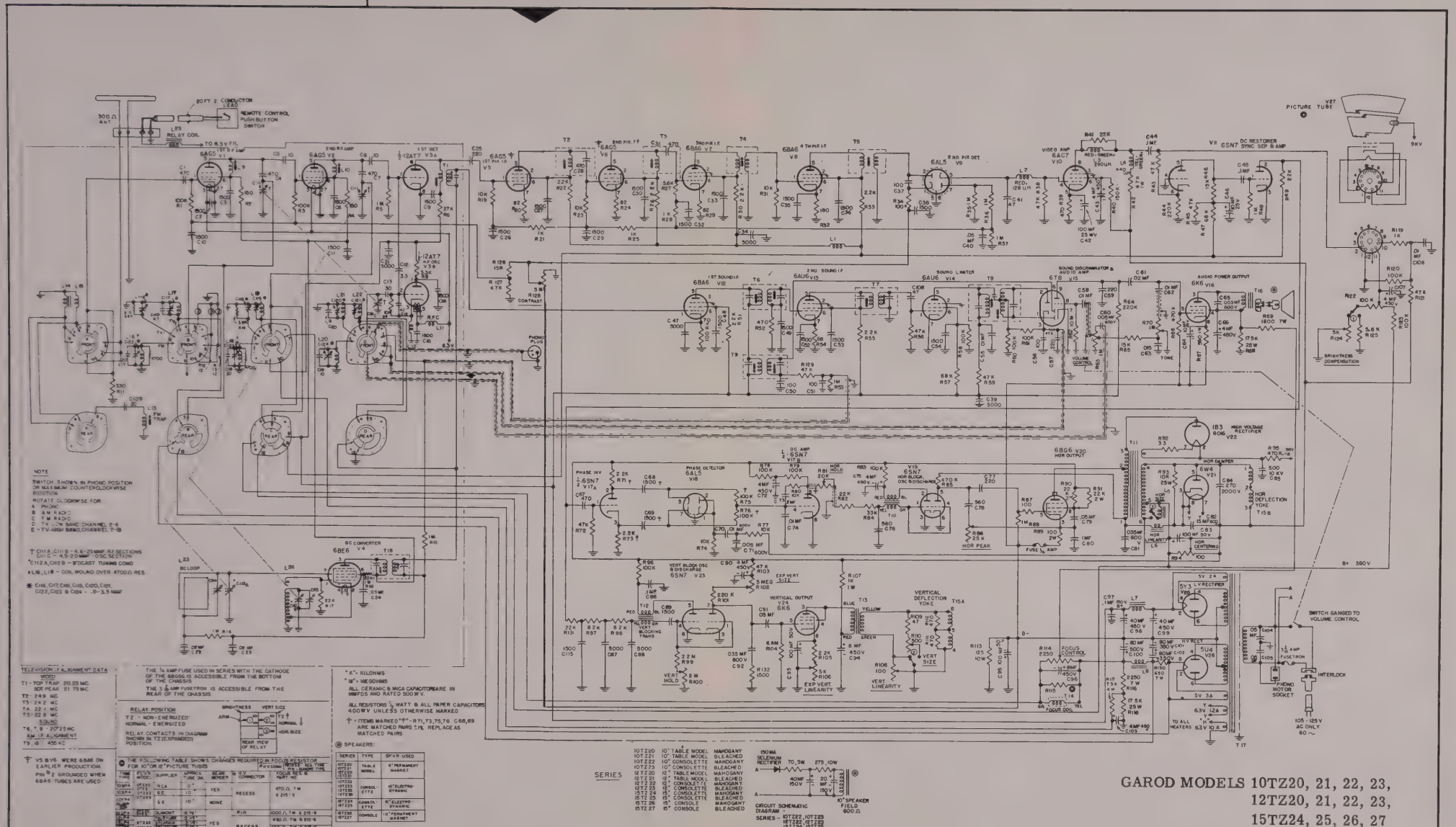

GAROD MODELS 10TZ20, 21, 22, 23,
12TZ20, 21, 22, 23,
15TZ24, 25, 26, 27

PRELIMINARY DATA

SET 95A FOLDER 4

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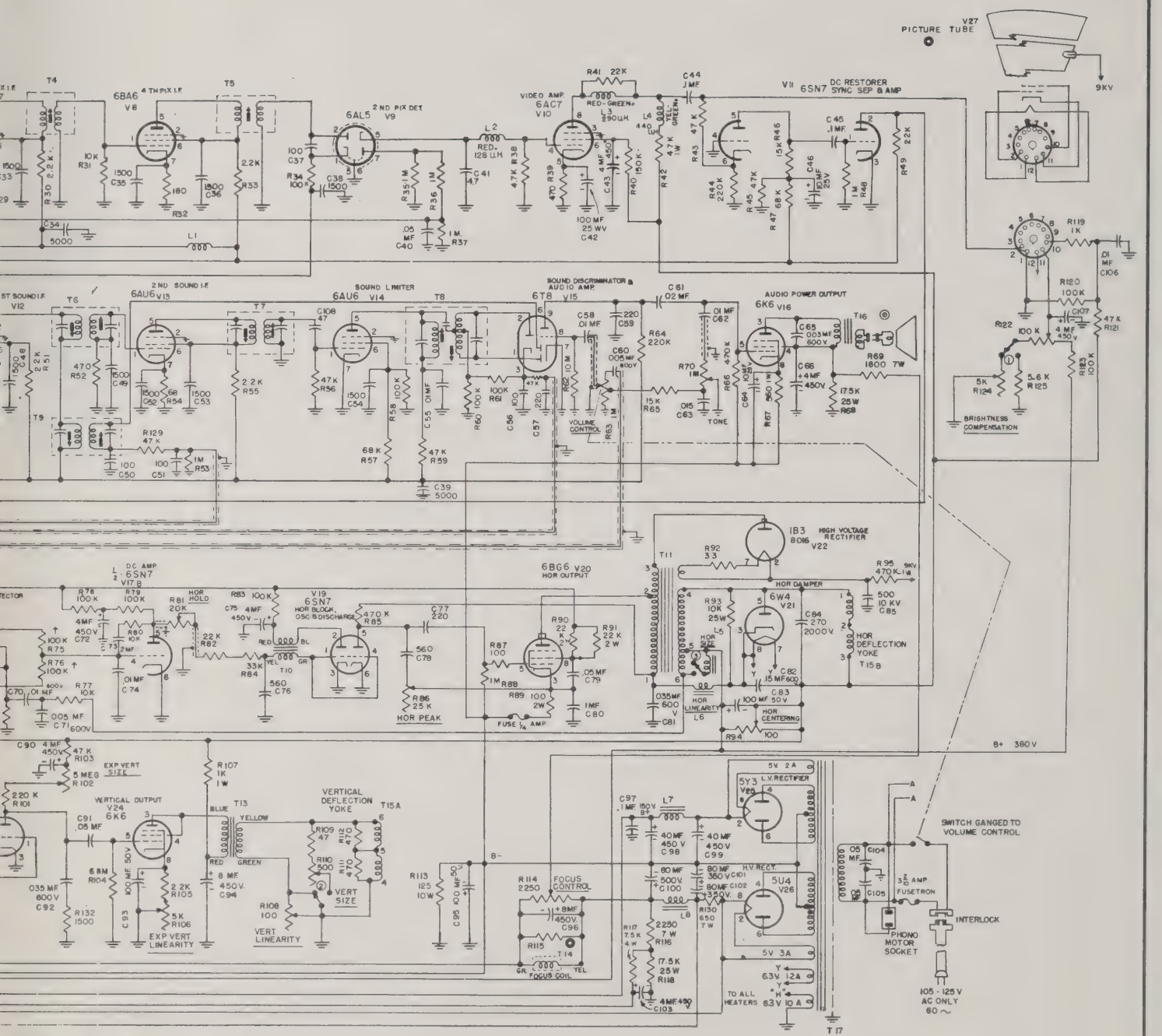

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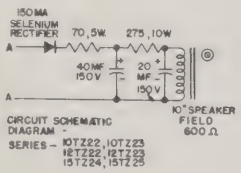
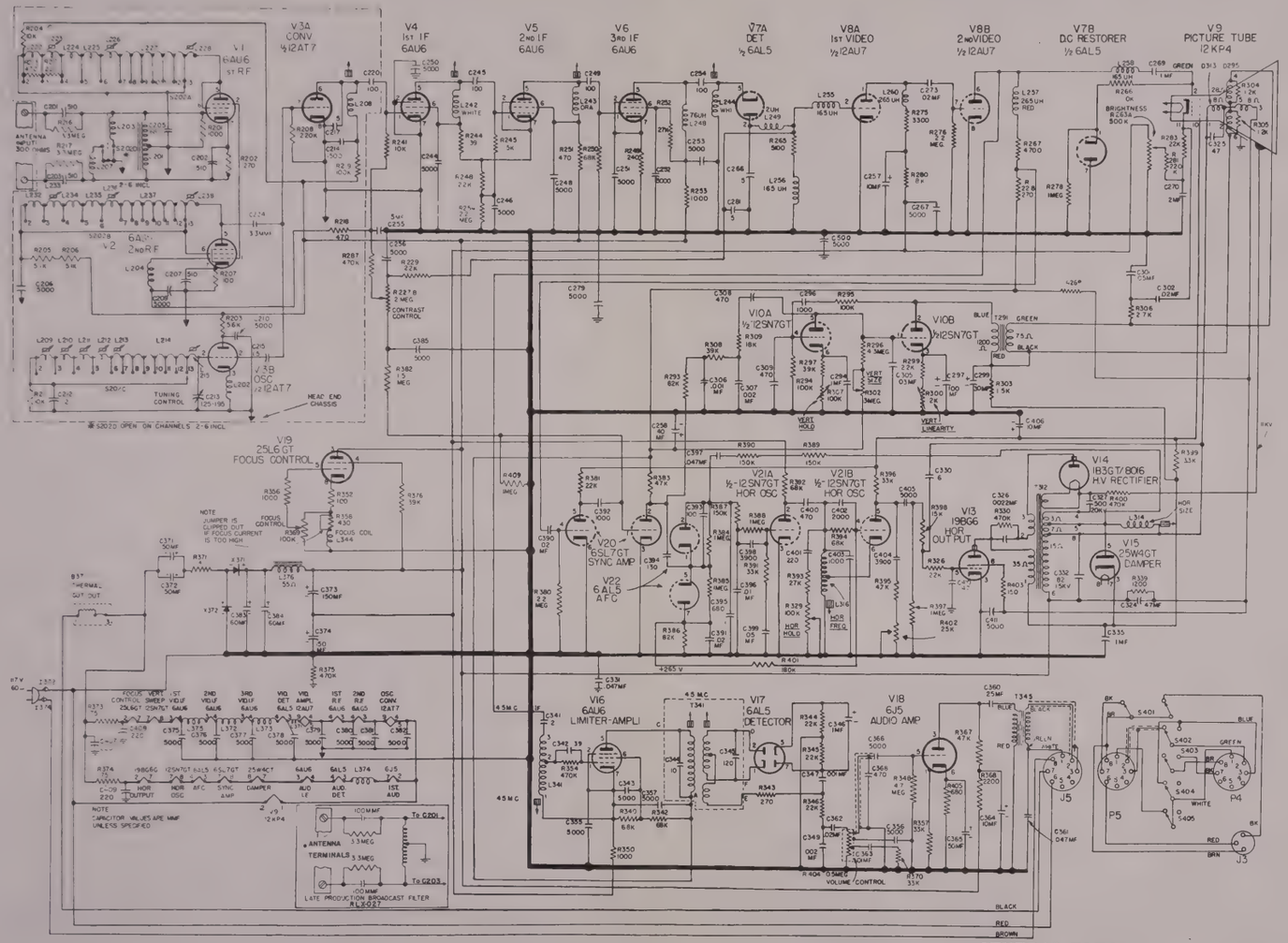
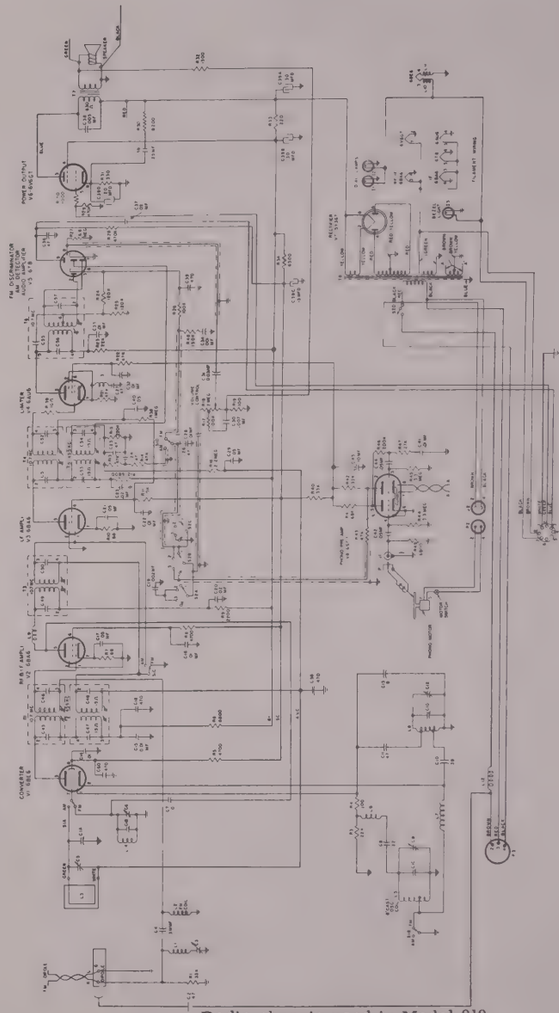


CIRCUIT SCHEMATIC DIAGRAM -
SERIES - 10TZ22, 10TZ23
12TZ22, 12TZ23
15TZ24, 15TZ25

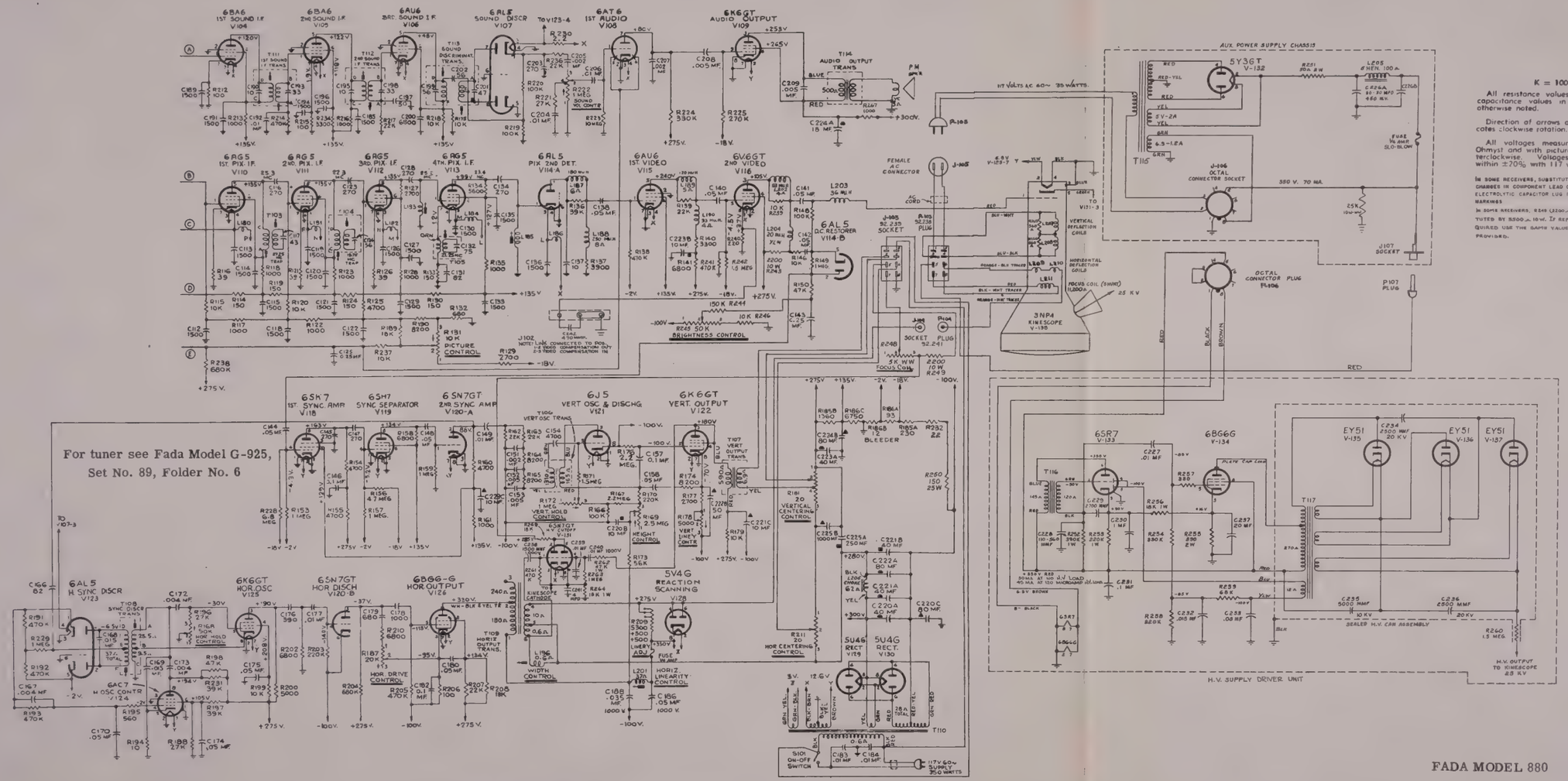
GAROD MODELS 10TZ20, 21, 22, 23, 12TZ20, 21, 22, 23, 15TZ24, 25, 26, 27



GENERAL ELECTRIC MODEL 818



Radio chassis used in Model 818


For tuner see Fada Model G-925, Set No. 89, Folder No. 6
6BA6 1ST SOUND I.F. V104
6BA6 2ND SOUND I.F. V105
6AU6 3RD. SOUND I.F. V106
6AL5 SOUND DISCR V107
6AT6 1ST AUDIO V108
6K6GT AUDIO OUTPUT V109
TIM. AUDIO OUTPUT TRANS
6AG5 1ST PIX. I.F. V110
6AG5 2ND PIX. I.F. V111
6AG5 3RD. PIX. I.F. V112
6AG5 4TH. PIX. I.F. V113
6AL5 PIX 2ND DET. V114-A
6AU6 1ST VIDEO V115
6V6GT 2ND VIDEO V116
6AL5 D.C. RESTORER V114-B
3NP4 KINESCOPE V-136
6SM7 1ST. SYNC. AMP V118
6SM7 SYNC SEPARATOR V119
6SN7GT 2ND SYNC AMP V120-A
6J5 VERT OSC. & DISCHG. V121
6K6GT VERT. OUTPUT V122
6AL5 H SYNC DISCR V123
6AC7 H OSC. CONTR V124
6K6GT HOR. OSC V125
6SN7GT HOR. DISCH V126-B
6BG6-G HOR. OUTPUT V126
5V4G REACTION SCANNING V128
5V4G RECT. V129
5U4G RECT. V130
AUX POWER SUPPLY CHASSIS
5Y3GT V-132
T115
J-106 OCTAL CONNECTOR SOCKET
J107 SOCKET
P107 PLUG
OCTAL CONNECTOR PLUG P-106
6SR7 V-133
6BG6G V-134
EY51 V-135
EY51 V-136
EY51 V-137
T116
T117
SEALED H.V. CRT ASSEMBLY
H.V. SUPPLY DRIVER UNIT
S101 ON-OFF Switch
117 V. 60~ SUPPLY 350 WATTS
PICTURE CONTROL
BRIGHTNESS CONTROL
HORIZ. LINEARITY CONTROL
HEIGHT CONTROL
WIDTH CONTROL
VERT. LINEARITY ADJ.
HOR. DRIVE CONTROL
HOR. HOLD CONTROL
VERT. HOLD CONTROL
VERTICAL CENTERING CONTROL
HOR. CENTERING CONTROL
BLEEDER
FOCUS COIL
DEFLECTION COILS
K = 1000
All resistance values in ohms, and capacitance values in mmfd., unless otherwise noted.
Direction of arrows at controls indicates clockwise rotation.
All voltages measured with Volt-Ohmyst and with picture control counterclockwise. Voltages should hold within ±20% with 117 v. a-c supply.
In some receivers, substitutions have caused changes in component lead color codes, in electrolytic capacitor lug identification markings.
In some receivers, R249 (2200Ω, 10W) is substituted by R300Ω, 10W. If replacement is required use the same value as originally provided.

FADA MODEL 880

PRELIMINARY DATA

SET 95A FOLDER 5 7

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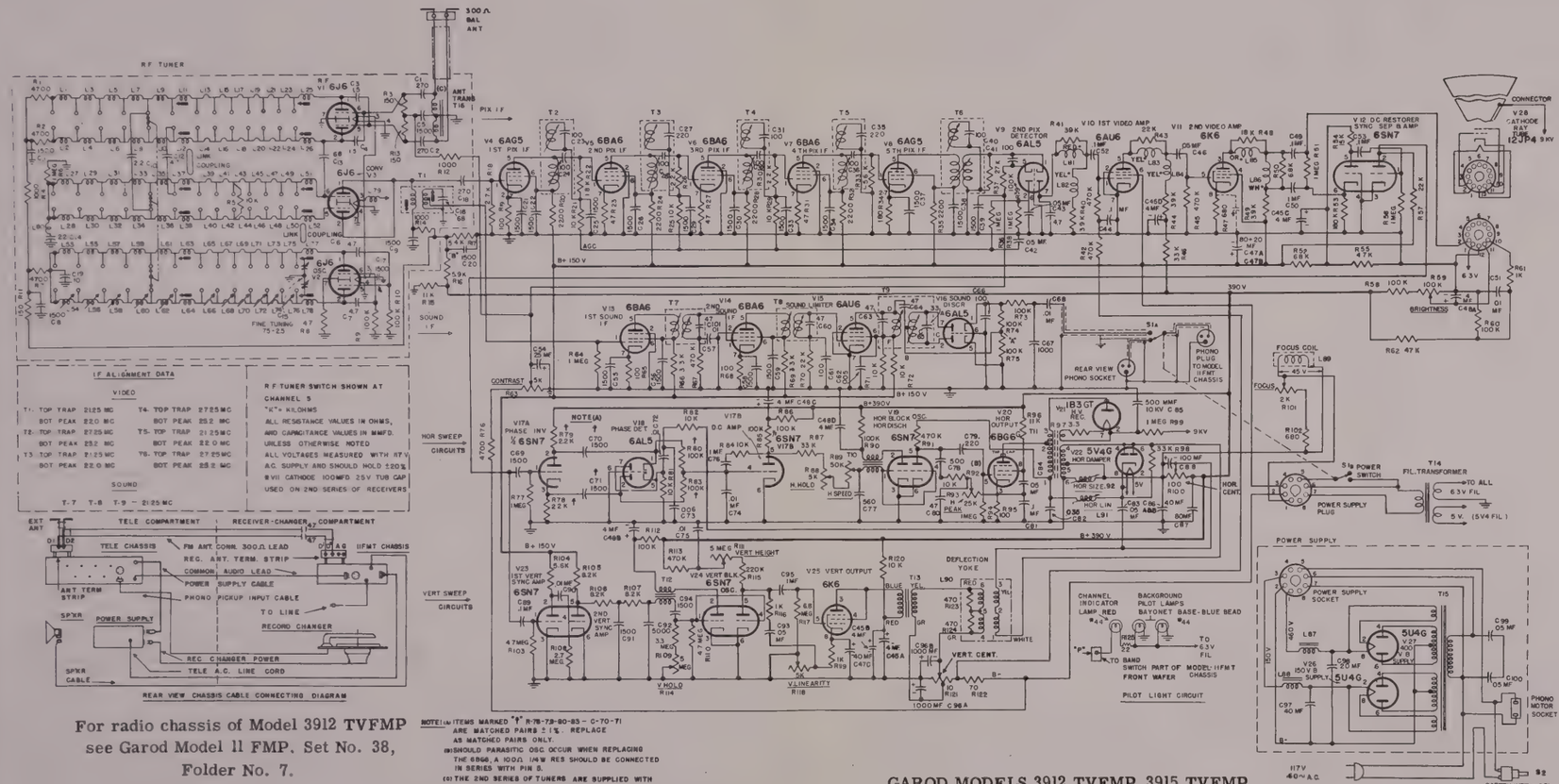
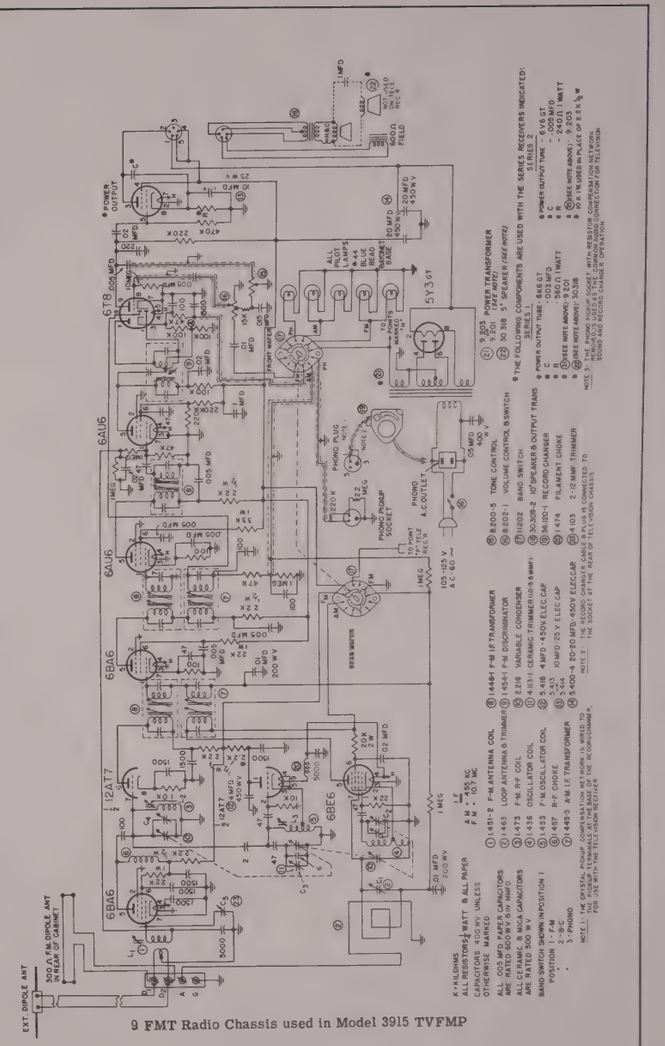
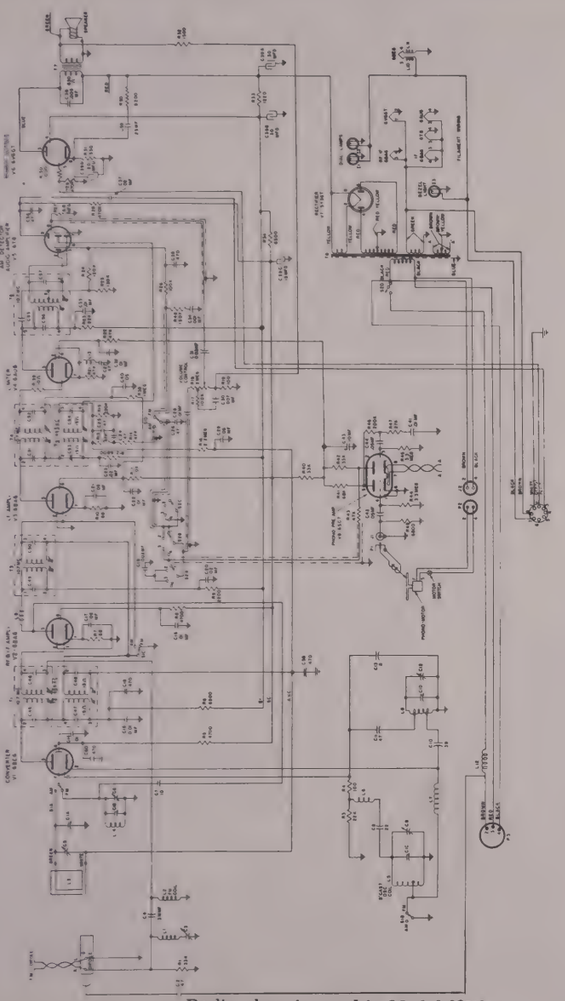


For radio chassis of Model 3912 TVFMP see Garod Model 11 FMP. Set No. 38, Folder No. 7.

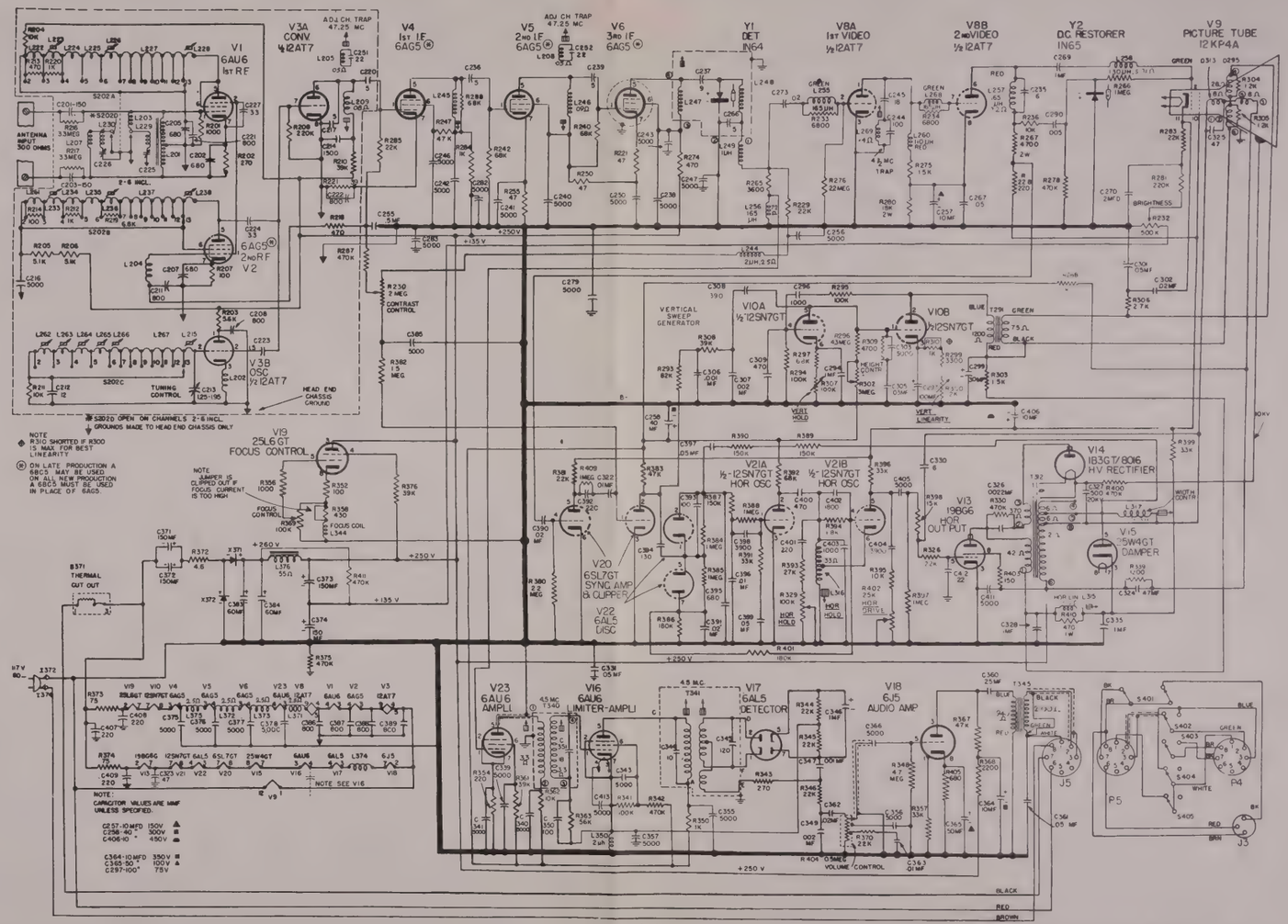
GAROD MODELS 3912 TVFMP, 3915 TVFMP



9 FMT Radio Chassis used in Model 3915 TVFMP



Radio chassis used in Model 12K1



PRELIMINARY DATA

SET 95A FOLDER 6

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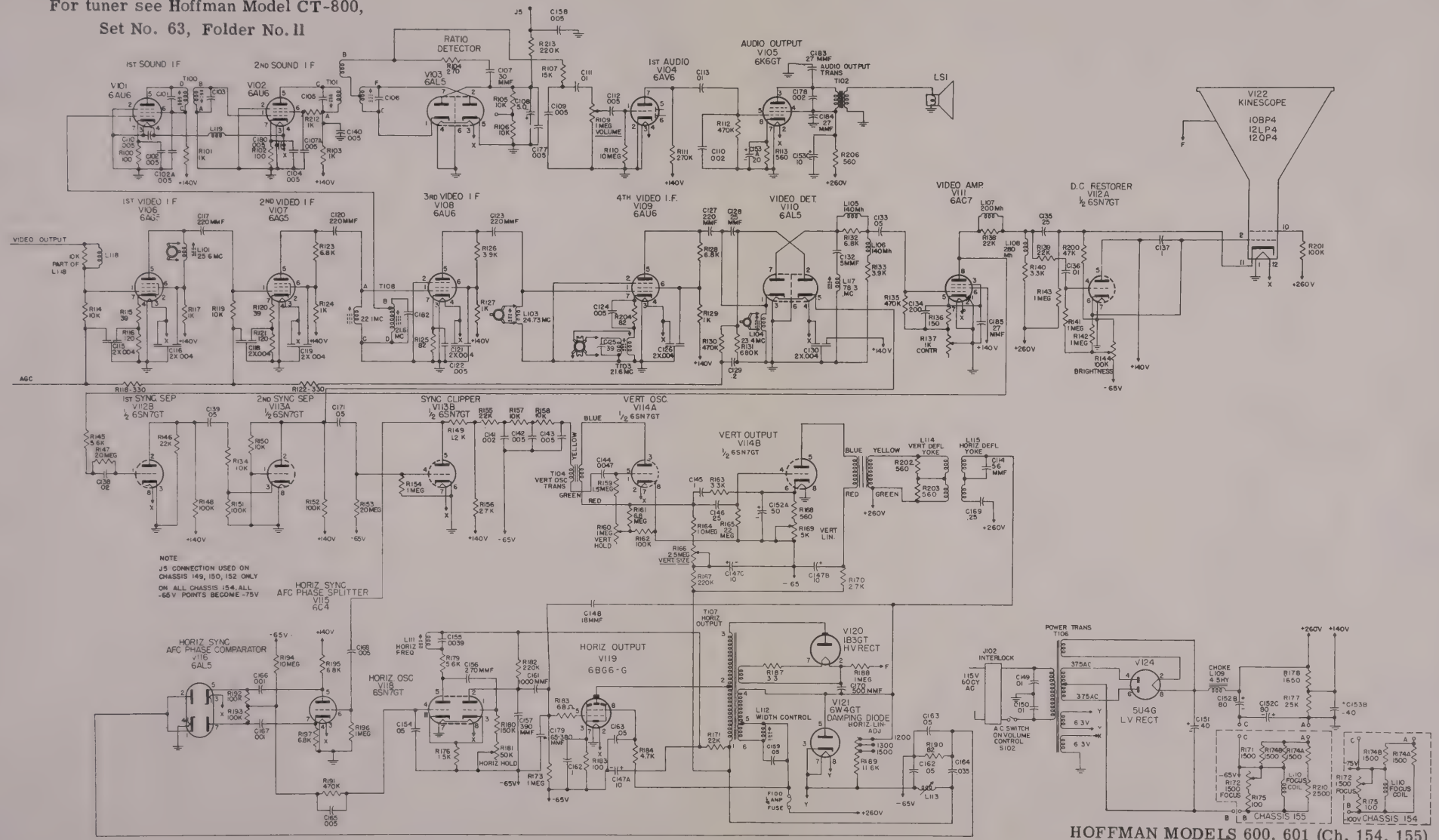
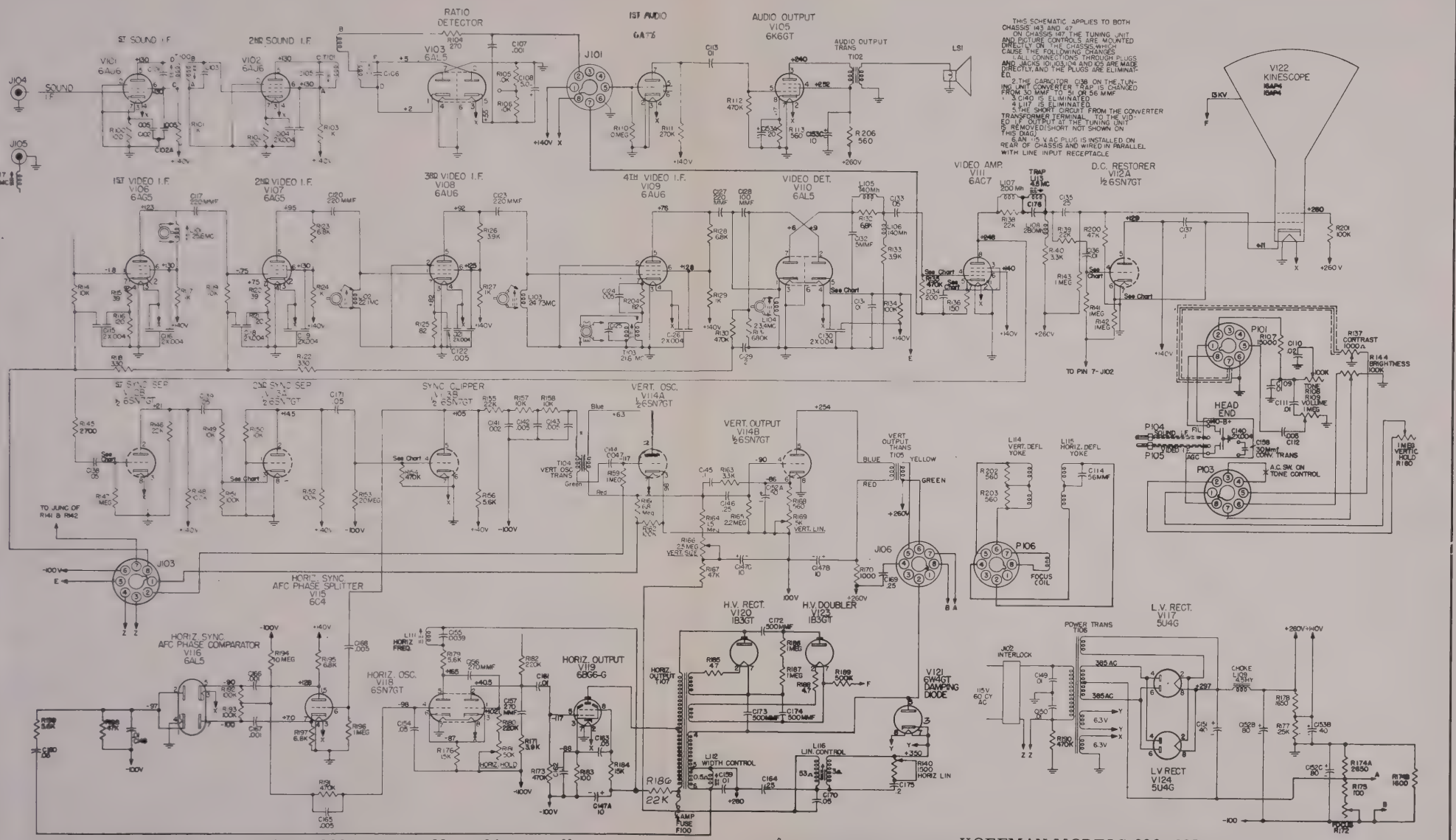
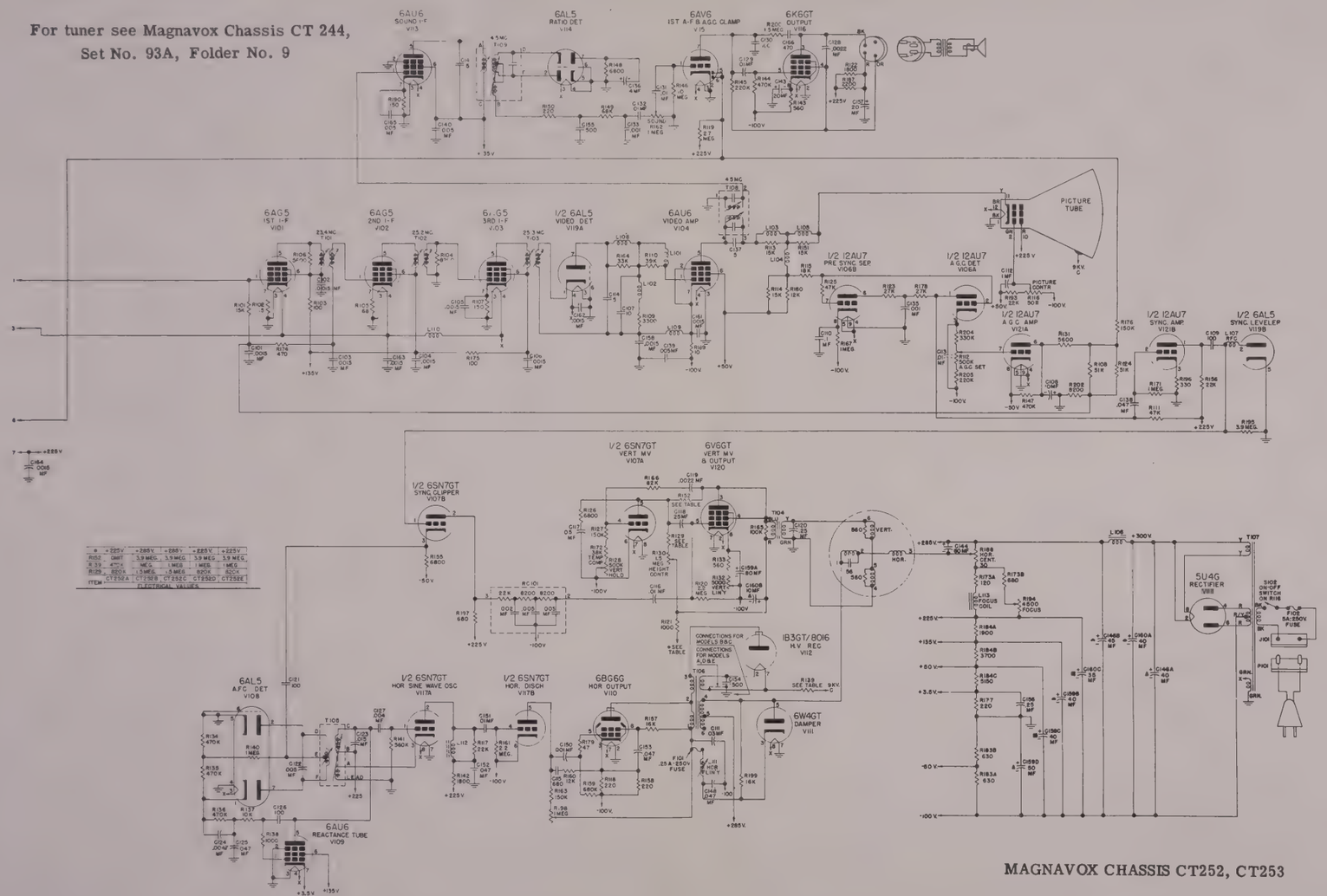
For tuner see Hoffman Model CT-800,
Set No. 63, Folder No. 11



HOFFMAN MODELS 600, 601 (Ch. 154, 155)


RATIO DETECTOR
1ST AUDIO
AUDIO OUTPUT V105 6K6GT
AUDIO OUTPUT TI02
1ST SOUND I.F
2ND SOUND I.F
1ST VIDEO I.F. V106 6AG5
2ND VIDEO I.F. V107 6AG5
3RD VIDEO I.F. V108 6AU6
4TH VIDEO I.F. V109 6AU6
VIDEO DET. V110 6AL5
VIDEO AMP. V111 6AC7
D.C. RESTORER V112A ½6SN7GT
V122 KINESCOPE
1ST SYNC SEP. V113A ½6SN7GT
2ND SYNC SEP. V113B ½6SN7GT
SYNC CLIPPER V113B ½6SN7GT
VERT. OSC. V114A ½6SN7GT
VERT. OUTPUT V114B ½6SN7GT
VERT. OUTPUT TRANS T105
VERT. DEFL. YOKE L114
HORIZ. DEFL. YOKE L115
HORIZ. SYNC. AFC PHASE SPLITTER V115 6C4
HORIZ. SYNC. AFC PHASE COMPARATOR V116 6AL5
HORIZ. OSC. V118 6SN7GT
HORIZ. OUTPUT V119 6BG6-G
H.V. RECT. V120 1B3GT
H.V. DOUBLER V123 1B3GT
V121 6W4GT DAMPING DIODE
L.V. RECT. V117 5U4G
L.V. RECT. V124 5U4G
POWER TRANS T106
CHOKE L109
HEAD END
A.C. SW. ON TONE CONTROL
FOCUS COIL
WIDTH CONTROL L112
LIN. CONTROL L116
HORIZ. HOLD
VERT. HOLD R180
CONTRAST R137
BRIGHTNESS R144
TONE R108
VOLUME R103
TRAP L115 4.5 MC
TRAP L105 4.5 MC
TRAP L104 4.73 MC
TRAP L103 4.73 MC
TRAP L102 4.5 MC
TRAP L101 4.5 MC
VERT. LIN.
VERT. SIZE
HORIZ. FREQ.
HORIZ. OUTPUT T107
VERT. OSC. TRANS T104
AMP FUSE F100
INTERLOCK J102
115 V. 60 CY. AC
TO JUNC OF R141 & R142
TO PIN 7 - J102
SOUND I.F
J101
J102
J103
J104
J105
J106
P101
P103
P104
P105
P106
L117 4.5 MC
R180 22K
R182 220K
R183 100
R184 15K
R185 4.7
R186 4.7
R187 1MEG
R188 1MEG
R189 500K
R190 470K
R191 470K
R194 10 MEG
R195 6.8K
R196 1MEG
R197 6.8K
R198 47K
R199 47K
R200 47K
R201 100K
R202 560
R203 560
R204 82
R205 .04
R206 560
R207 47K
R208 47K
R209 47K
R210 .5MEG
R211 270K
R212 470K
R213 560
R214 470K
R215 .004
R216 .004
R217 .004
R218 330
R219 330
R220 330
R221 .004
R222 .004
R223 6.8K
R224 1K
R225 82
R226 3.9K
R227 1K
R228 6.8K
R229 1K
R230 470K
R231 6.8K
R232 3.3K
R233 3.9K
R234 200
R235 150
R236 150
R237 1K
R238 470K
R239 470K
R240 1500 HORIZ LIN
R241 1MEG
R242 1MEG
R243 1MEG
R244 1MEG
R245 2700
R246 22K
R247 1MEG
R248 10K
R249 10K
R250 10K
R251 10K
R252 100K
R253 2.0MEG
R254 470K
R255 22K
R256 5.6K
R257 10K
R258 10K
R259 1MEG
R260 1K
R261 6.8 Meg
R262 1K
R263 3.3K
R264 1.5 Meg
R265 1.2 MEG
R266 2.2 MEG
R267 47K
R268 1K
R269 5K
R270 1000
R271 1000
R272 1600
R273 2650
R274 100
R275 1600
R276 40
R277 25K
R278 650
R279 5.6K
R280 47K
R281 47K
R282 220K
R283 280K
R284 50K
R285 470K
R286 5.6K
R287 47K
R288 47K
R289 47K
R290 470K
R291 470K
R292 47K
R293 100K
R294 10 MEG
R295 6.8K
R296 1MEG
R297 6.8K
R298 47K
R299 5.6K
R300 47K
C101 .001
C102A 20
C102B .001
C103 .01
C104 .001
C105 .001
C106 .001
C107 .001
C108 5.0
C109 .01
C110 .02
C111 .01
C112 .05
C113 .01
C114 56MMF
C115 .25
C116 .05
C117 .05
C118 .05
C119 .05
C120 220 MMF
C121 220 MMF
C122 .005
C123 220 MMF
C124 .005
C125 .05
C126 2 X 004
C127 220 MMF
C128 100 MMF
C129 .2
C130 2 X 004
C131 .01
C132 5MMF
C133 .05
C134 .05
C135 .25
C136 .05
C137 .1
C138 .05
C139 .05
C140 2 X 004
C141 .002
C142 .005
C143 .002
C144 .0047
C145 .25
C146 .25
C147A 10
C147B 10
C147C 10
C148 .05
C149 .01
C150 .01
C151 .05
C152A 20
C152B 80
C152C 80
C153A 10
C153B 10
C153C 10
C154 .05
C155 .0039
C156 .0047
C157 270 MMF
C158 30MMF CONV. TRANS
C159 .01
C160 .05
C161 .01
C162 .05
C163 .05
C164 .25
C165 .005
C166 .005
C167 .001
C168 .005
C169 .25
C170 .05
C171 .05
C172 300MMF
C173 500MMF
C174 500MMF
C175 .2
C176 .05
C177 .05
C178 .05
C179 .05
C180 .05
C181 .05
C182 .05
C183 .05
C184 .05
C185 .05
C186 .05
C187 .05
C188 .05
C189 .05
C190 .05
C191 .05
C192 .05
C193 .05
C194 .05
C195 .05

For tuner see Magnavox Chassis CT 244, Set No. 93A, Folder No. 9



MAGNAVOX CHASSIS CT252, CT253

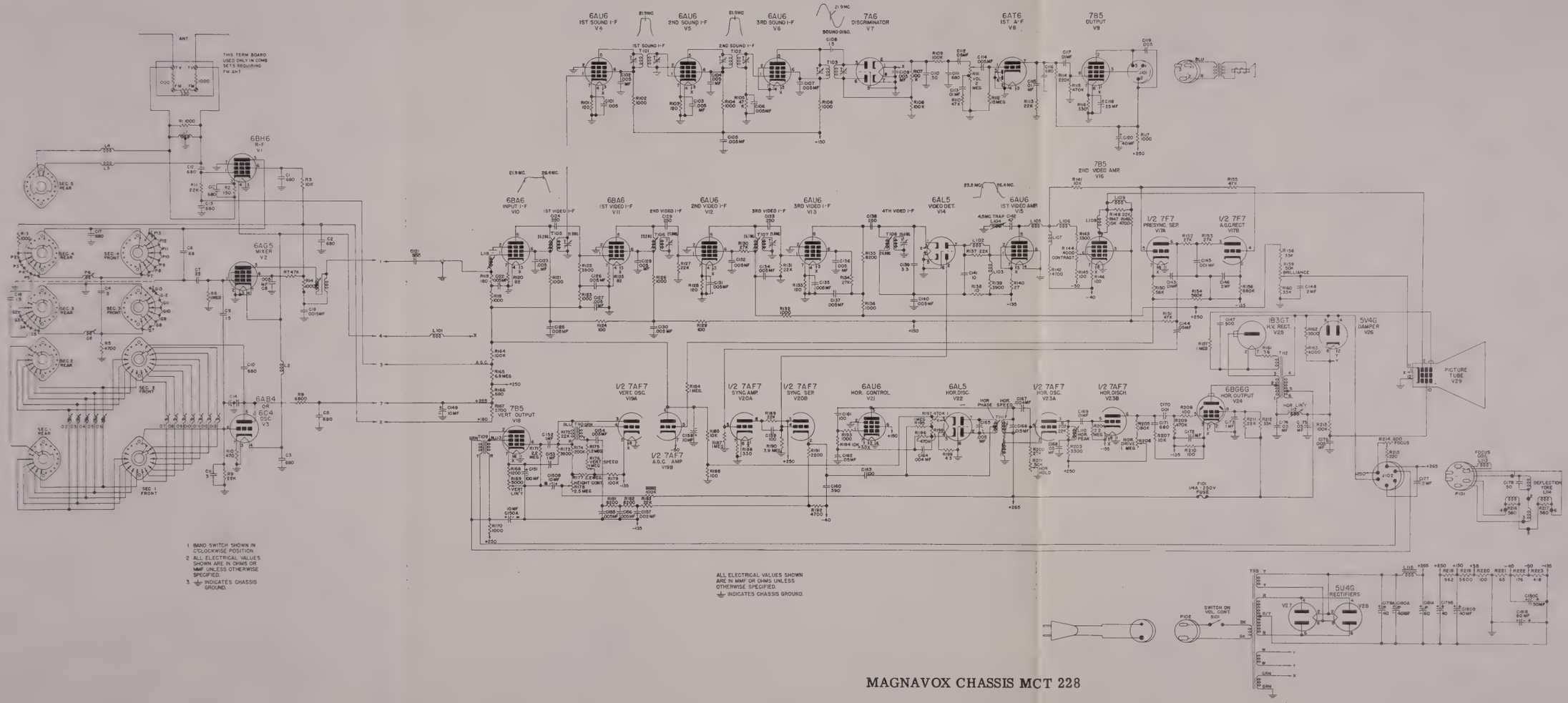
VARIATIONS OF MAGNAVOX CHASSIS CT237 AND CT238 FROM CT219, CT220, CT222.

(SEE SET 82, FOLDER 7)

Chassis CT219-220-222	Chassis CT237-238
1. C96 is connected between terminal 2 of 1B3GT and terminal 4 of horizontal output transformer.	1. C96 is connected between terminal 2 of 1B3GT and chassis.
2. Terminal 6 of horizontal output transformer is not connected.	2. A .03 MFD. 600V capacitor is connected between terminals 5 and 6 of the horizontal transformer in series with a switch. The switch is located at the rear of the high voltage compartment and is used to control the size.
3. Bottom end of R100 is connected to the +225 volts B+ line.	3. The bottom end of R100 is connected to the junction of the horizontal and vertical centering controls.
4. C91 is .03 MFD.	4. C91 changed to .02 MFD.
5. C45 is connected as shown on the schematic.	5. A variable inductance trap coil is connected in series with C45. The part number for this assembly is 360417-1 and includes the 10 MMF. capacitor C45. The coil is adjusted to 77.25mc to eliminate a variable beat pattern on the screen caused by the third harmonic of the IF frequency.
6. L14 is identified with a black dot and R48 is 4700 ohms.	6. L14 has a violet dot and R48 is 3300 ohms. (Note - some CT219, CT220, CT222 chassis may use this coil and resistor.)

Chassis CT237 uses the same tuner as CT220. Chassis CT238 uses the same tuner as CT219.

Otherwise CT237 and CT238 are identical.


6AU6 IST SOUND I-F V4
6AU6 2ND SOUND I-F V5
6AU6 3RD SOUND I-F V6
7A6 DISCRIMINATOR V7
6AT6 IST A-F V8
7B5 OUTPUT V9
6BH6 R-F V1
6AG5 MIXER V2
6BA6 INPUT I-F V10
6BA6 IST VIDEO I-F V11
6AU6 2ND VIDEO I-F V12
6AU6 3RD VIDEO I-F V13
6AL5 VIDEO DET. V14
6AU6 IST VIDEO AMP V15
7B5 2ND VIDEO AMP V16
1/2 7AB4 OR 6C4 OSC V3
7B5 VERT. OUTPUT V18
1/2 7AF7 VERT. OSC. V19A
1/2 7AF7 A.G.C. AMP V19B
1/2 7AF7 SYNC. AMP V20A
1/2 7AF7 SYNC. SER V20B
6AU6 HOR. CONTROL V21
6AL5 HOR. DISC. V22
1/2 7AF7 HOR. OSC. V23A
1/2 7AF7 HOR. DISCH V23B
1/2 7F7 PRESYNC. SER V17A
1/2 7F7 A.G.C. RECT V17B
1B3GT H.V. REGT. V25
5V4G DAMPER V26
6BG6G HOR. OUTPUT V24
PICTURE TUBE V29
5U4G RECTIFIERS V27 V28
21.9 MC
26.4 MC
83.2 MC
4.5 MC TRAP
SEC. 1 FRONT
SEC. 2 REAR
SEC. 3 FRONT
SEC. 3 REAR
SEC. 4 FRONT
SEC. 4 REAR
SEC. 5 REAR
THIS TERM BOARD USED ONLY IN COMB SETS REQUIRING FM ANT
1 BAND SWITCH SHOWN IN C'CLOCKWISE POSITION
2 ALL ELECTRICAL VALUES SHOWN ARE IN OHMS OR MMF UNLESS OTHERWISE SPECIFIED.
3 ⏚ INDICATES CHASSIS GROUND.
ALL ELECTRICAL VALUES SHOWN ARE IN MMF OR OHMS UNLESS OTHERWISE SPECIFIED.
⏚ INDICATES CHASSIS GROUND.
SWITCH ON VOL. CONT
FOCUS
DEFLECTION YOKE
MAGNAVOX CHASSIS MCT 228

PRELIMINARY DATA

SET 95A FOLDER 9

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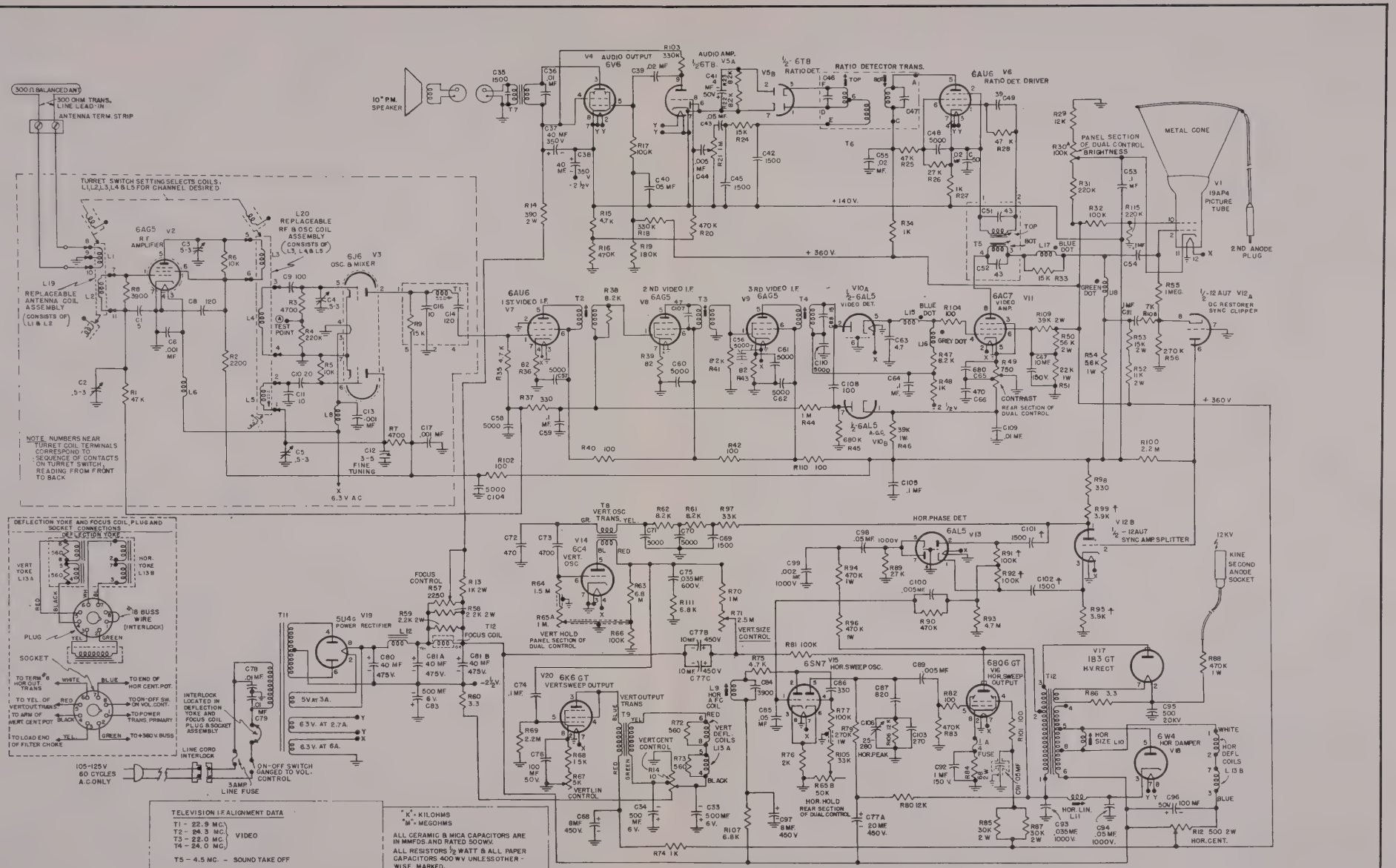
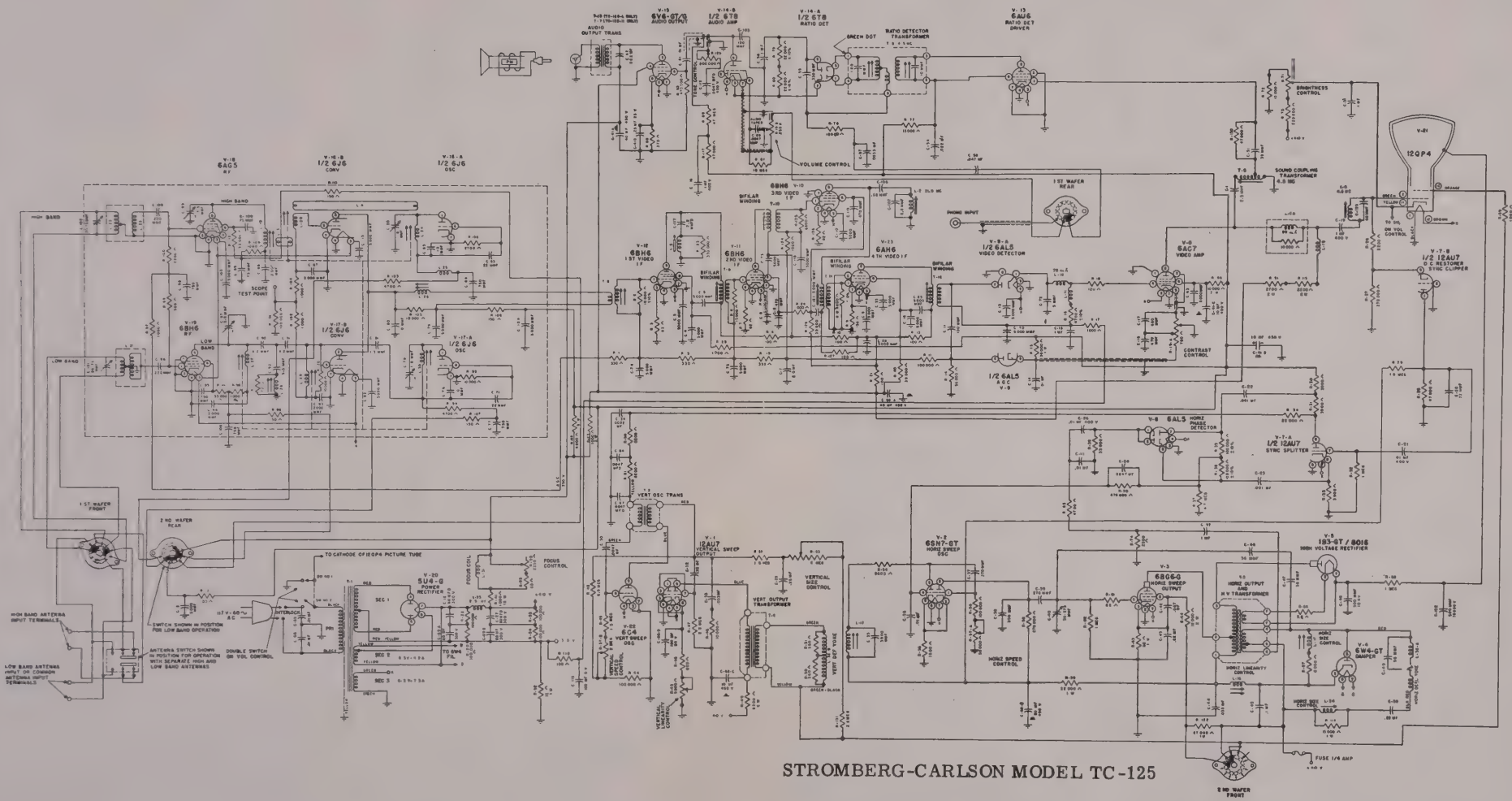

300 Ω BALANCED ANT
300 OHM TRANS. LINE LEAD-IN
ANTENNA TERM. STRIP
10" P.M. SPEAKER
TURRET SWITCH SETTING SELECTS COILS L1,L2,L3,L4 & L5 FOR CHANNEL DESIRED
6AG5 RF AMPLIFIER V2
L20 REPLACEABLE RF & OSC COIL ASSEMBLY (CONSISTS OF L3, L4 & L5)
6J6 OSC. & MIXER V3
L19 REPLACEABLE ANTENNA COIL ASSEMBLY (CONSISTS OF L1 & L2)
TEST POINT
FINE TUNING
6.3 V AC
NOTE NUMBERS NEAR TURRET COIL TERMINALS CORRESPOND TO SEQUENCE OF CONTACTS ON TURRET SWITCH, READING FROM FRONT TO BACK
V4 AUDIO OUTPUT 6V6
AUDIO AMP. V5A
½-6T8 RATIO DET. V5B
RATIO DETECTOR TRANS.
6AU6 V6 RATIO DET. DRIVER
+140 V.
+360 V.
PANEL SECTION OF DUAL CONTROL BRIGHTNESS
METAL CONE
V1 19AP4 PICTURE TUBE
2ND ANODE PLUG
6AU6 1ST VIDEO I.F. V7
2ND VIDEO I.F. 6AG5 V8
3RD VIDEO I.F. 6AG5 V9
V10A ½-6AL5 VIDEO DET.
6AC7 VIDEO AMP. V11
½-12AU7 V12A D.C. RESTORER SYNC CLIPPER
CONTRAST
REAR SECTION OF DUAL CONTROL
½-6AL5 A.G.C. V10B
½-12AU7 V12B SYNC AMP SPLITTER
HOR. PHASE DET 6AL5 V13
VERT. OSC 6C4 V14
VERT HOLD PANEL SECTION OF DUAL CONTROL
VERT. SIZE CONTROL
6SN7 V15 HOR. SWEEP OSC.
6BQ6 GT V16 HOR. SWEEP OUTPUT
183 GT H.V. RECT V17
KINE SECOND ANODE SOCKET
6W4 HOR. DAMPER V18
HOR. SIZE L10
HOR. LIN. L11
HOR. DEFL. COILS L13B
HOR. CENT.
5U4G POWER RECTIFIER V19
6K6 GT VERTSWEEP OUTPUT V20
VERT OUTPUT TRANS T9
VERT CENT CONTROL
VERT DEFL. COILS L13A
VERT LIN CONTROL
HOR. PEAK
HOR. HOLD REAR SECTION OF DUAL CONTROL
FOCUS CONTROL R57
FOCUS COIL T12
DEFLECTION YOKE AND FOCUS COIL PLUG AND SOCKET CONNECTIONS
DEFLECTION YOKE
VERT YOKE L13A
HOR. YOKE L13B
18 BUSS WIRE (INTERLOCK)
PLUG
SOCKET
TO TERM. 6 HOR. OUT. TRANS
TO YEL. OF VERT. OUT. TRANS
TO ARM OF VERT. CENT. POT
TO LOAD END OF FILTER CHOKE
TO END OF HOR. CENT. POT.
TO ON-OFF SW. ON VOL. CONT.
TO POWER TRANS. PRIMARY
TO +360 V. BUSS
INTERLOCK LOCATED IN DEFLECTION YOKE AND FOCUS COIL PLUG & SOCKET ASSEMBLY
LINE CORD INTERLOCK
105-125 V 60 CYCLES A.C. ONLY
3 AMP. LINE FUSE
ON-OFF SWITCH GANGED TO VOL. CONTROL
5 V. AT 3 A.
6.3 V. AT 2.7 A.
6.3 V. AT 6 A.
TELEVISION I.F. ALIGNMENT DATA
T1 - 22.9 MC.
T2 - 24.3 MC.
T3 - 22.0 MC.
T4 - 24.0 MC.
VIDEO
T5 - 4.5 MC. - SOUND TAKE OFF
T6 - 4.5 MC. - RATIO DETECTOR
"K" = KILOHMS
"M" = MEGOHMS
ALL CERAMIC & MICA CAPACITORS ARE IN MMFDS. AND RATED 500 WV.
ALL RESISTORS ½ WATT & ALL PAPER CAPACITORS 400 WV UNLESS OTHERWISE MARKED.
†-ITEMS MARKED "†": R91, R92, R95, R99, C101, C102 - ARE MATCHED PAIRS ± 1% REPLACE AS MATCHED PAIRS.

MAJESTIC MODEL 1900



STROMBERG-CARLSON MODEL TC-125

PRELIMINARY DATA

SET 95A FOLDER 10 13

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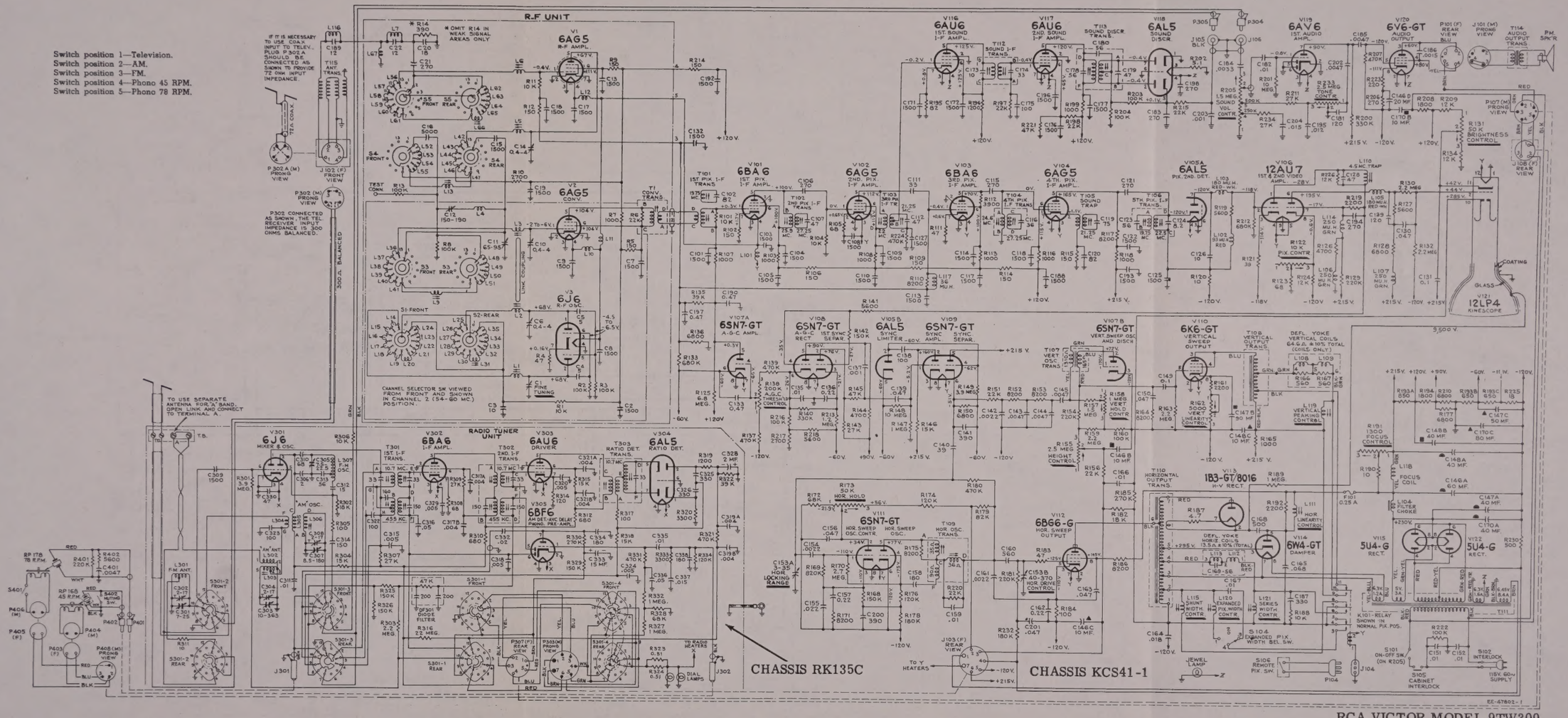
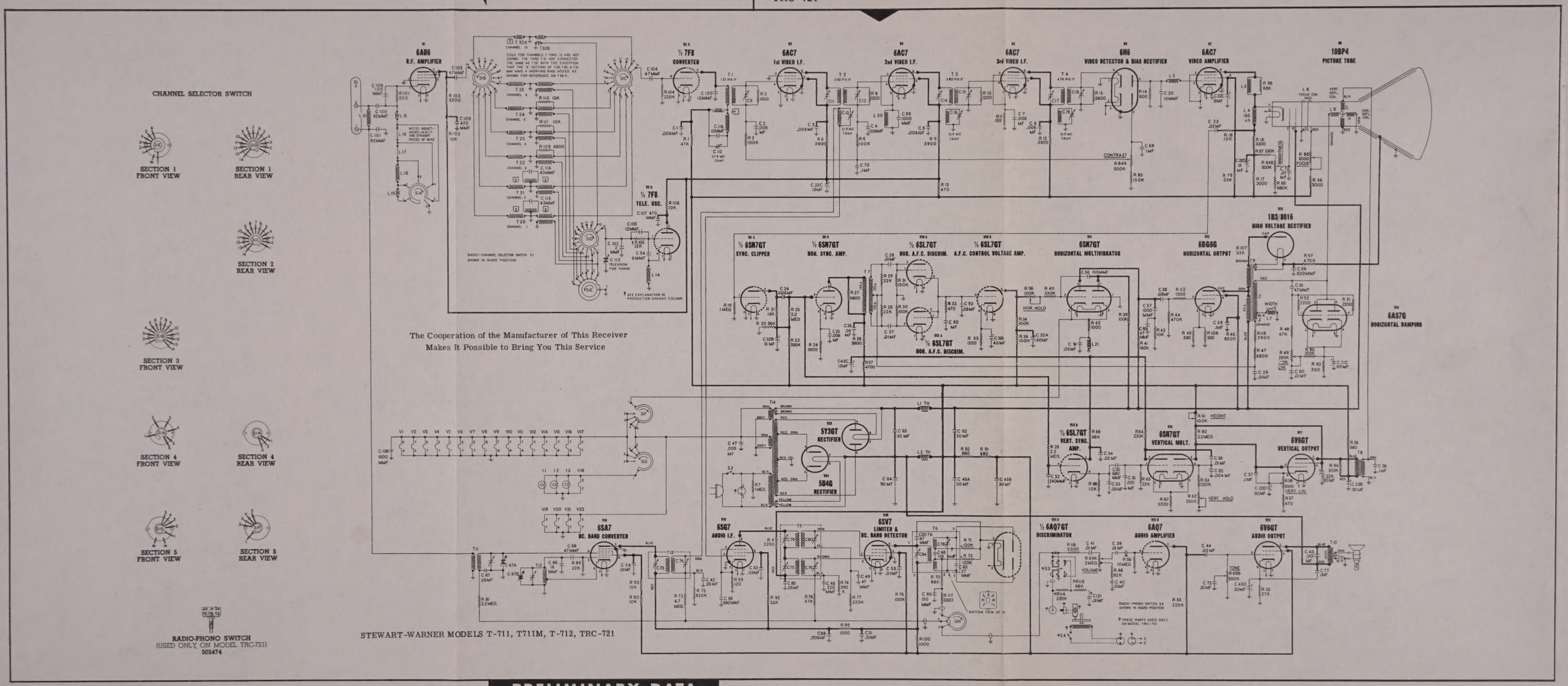
Switch position 1—Television.
Switch position 2—AM.
Switch position 3—FM.
Switch position 4—Phono 45 RPM.
Switch position 5—Phono 78 RPM.


R-F UNIT
RADIO TUNER UNIT
CHASSIS RK135C
CHASSIS KCS41-1
V1 6AG5 R-F AMPL.
V2 6AG5 CONV.
V3 6J6 R-F OSC.
V101 6BA6 1ST PIX. I-F AMPL.
V102 6AG5 2ND. PIX. I-F AMPL.
V103 6BA6 3RD PIX. I-F AMPL.
V104 6AG5 4TH PIX. I-F AMPL.
V105A 6AL5 PIX. 2ND. DET.
V105B 6AL5 SYNC LIMITER
V106 12AU7 1ST & 2ND VIDEO AMPL.
V107A 6SN7-GT A-G-C AMPL.
V107B 6SN7-GT VERT. SWEEP OSC AND DISCH
V108 6SN7-GT A-G-C 1ST SYNC SEPAR.
V109 6SN7-GT SYNC AMPL. SYNC SEPAR.
V110 6K6-GT VERTICAL SWEEP OUTPUT
V111 6SN7-GT HOR. SWEEP OSC. CONTR.
V112 6BG6-G HOR. SWEEP OUTPUT
V113 1B3-GT/8016 H-V RECT.
V114 6W4-GT DAMPER
V115 5U4-G RECT.
V116 6AU6 1ST SOUND I-F AMPL.
V117 6AU6 2ND SOUND I-F AMPL.
V118 6AL5 SOUND DISCR.
V119 6AV6 1ST AUDIO AMPL.
V120 6V6-GT AUDIO OUTPUT
V121 12LP4 KINESCOPE
V122 5U4-G RECT.
V301 6J6 MIXER & OSC.
V302 6BA6 I-F AMPL.
V303 6AU6 DRIVER
V304 6AL5 RATIO DET.
V305 6BF6 AM DET-AVC DELAY & PHONO. PRE-AMPL.
TO USE SEPARATE ANTENNA FOR 'A' BAND, OPEN LINK AND CONNECT TO TERMINAL 'A'.
IF IT IS NECESSARY TO USE COAX. INPUT TO TELEV., PLUG P302 A SHOULD BE CONNECTED AS SHOWN TO PROVIDE 72 OHM INPUT IMPEDANCE.
P302 CONNECTED AS SHOWN THE TEL. RECEIVER INPUT IMPEDANCE IS 300 OHMS BALANCED.
300 Ω BALANCED
CHANNEL SELECTOR SW VIEWED FROM FRONT AND SHOWN IN CHANNEL 2 (54-60 MC.) POSITION.
* OMIT R14 IN WEAK SIGNAL AREAS ONLY
TO RADIO HEATERS
TO Y HEATERS
JEWEL LAMP
DIAL LAMPS
S101 ON-OFF SW. (ON R205)
S102 INTERLOCK
S103 CABINET INTERLOCK
S104 EXPANDED PIX WIDTH SEL. SW.
S106 REMOTE PIX. SW.
K101 RELAY SHOWN IN NORMAL PIX POS.
118V. 60~ SUPPLY
COATING
GLASS
5,500 V.

EE-67802-1

RCA VICTOR MODEL 9TW309


CHANNEL SELECTOR SWITCH
SECTION 1 FRONT VIEW
SECTION 1 REAR VIEW
SECTION 2 REAR VIEW
SECTION 3 FRONT VIEW
SECTION 4 FRONT VIEW
SECTION 4 REAR VIEW
SECTION 5 FRONT VIEW
SECTION 5 REAR VIEW
RADIO-PHONO SWITCH
(USED ONLY ON MODEL TRC-721)
505474
The Cooperation of the Manufacturer of This Receiver
Makes It Possible to Bring You This Service
STEWART-WARNER MODELS T-711, T711M, T-712, TRC-721
6AU6 R.F. AMPLIFIER
½ 7F8 CONVERTER
6AC7 1st VIDEO I.F.
6AC7 2nd VIDEO I.F.
6AC7 3rd VIDEO I.F.
6H6 VIDEO DETECTOR & BIAS RECTIFIER
6AC7 VIDEO AMPLIFIER
10BP4 PICTURE TUBE
½ 7F8 TELE. OSC.
½ 6SN7GT SYNC. CLIPPER
½ 6SN7GT HOR. SYNC. AMP.
½ 6SL7GT HOR. A.F.C. DISCRIM.
½ 6SL7GT A.F.C. CONTROL VOLTAGE AMP.
6SN7GT HORIZONTAL MULTIVIBRATOR
6BG6G HORIZONTAL OUTPUT
1B3/8016 HIGH VOLTAGE RECTIFIER
6AS7G HORIZONTAL DAMPING
5Y3GT RECTIFIER
5U4G RECTIFIER
6SA7 BC. BAND CONVERTER
6SG7 AUDIO I.F.
6SV7 LIMITER & BC. BAND DETECTOR
½ 6SL7GT VERT. SYNC. AMP.
6SN7GT VERTICAL MULT.
6V6GT VERTICAL OUTPUT
½ 6AQ7GT DISCRIMINATOR
6AQ7 AUDIO AMPLIFIER
6V6GT AUDIO OUTPUT
RADIO-CHANNEL SELECTION SWITCH S1 SHOWN IN RADIO POSITION
RADIO-PHONO SWITCH S3 SHOWN IN RADIO POSITION
THESE PARTS USED ONLY ON MODEL TRC-721
BOTTOM VIEW OF T6
SEE EXPLANATION IN PRODUCTION CHANGE COLUMN

PRELIMINARY DATA

SET 95A FOLDER 11, 12

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